Trains

August

1945

25¢

★ Pere Marquette Railway

★ The Circus Moves by Rail

★ Timetable Prize Contest

WHAT MAKES
A RAILROAD GREAT ?

HEAVY RAIL on a Firmly Ballasted Road Bed

●A railroad's "backbone" is its roadbed . . . the heavy steel rails, sturdy, scientifically treated ties, rock ballast. Subject to the "pounding" of huge trains and to the ravages of weather, roadbeds require constant care and attention.

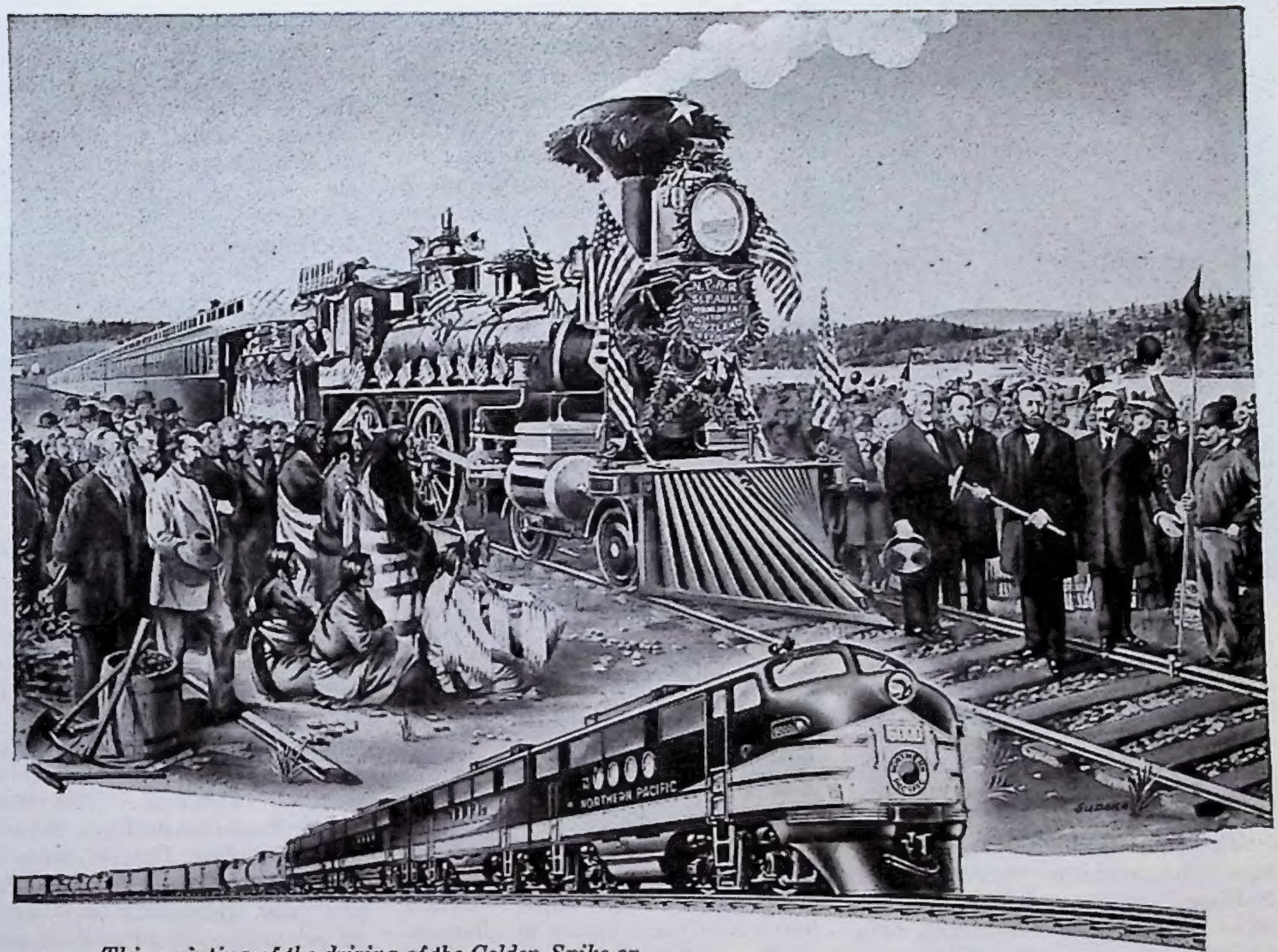
Last year Frisco spent millions of dollars to maintain and improve its 5000 miles of track. But it's money well spent. Passengers enjoy the comfort and a feeling of security when the rails and roadbed are as fine as Frisco's. Freight is transported with a minimum of jolt and jar. Passenger train schedules are more dependable.

This essential "groundwork" for a great railroad has gone on in wartime, too—aiding Frisco's contribution to Victory and preparing for postwar operations.

FRISCO LINES
ST. LOUIS-SAN FRANCISCO RY.

FFF FRISCO FASTER FREIGHT

A Great Railroad



This painting of the driving of the Golden Spike on September 8, 1883, is a composite, in Currier & Ives style, of an actual photograph of the historic engine and a mural now decorating the Montana State Capitol in Helena.

WRITING NEW RAILROAD HISTORY

Sun glinting on yellow metal marked a great moment in railroad history that day in September, 1883. At Gold Creek, Montana, General U. S. Grant drove home a golden spike—and the Northern Pacific, first of the northern transcontinental railroads, was completed.

Shortly after, a special train puffed over the spot, carrying officials and distinguished guests from the East and Europe, on the first through train trip from St. Paul to Portland, Oregon.

History is still being made on the Northern Pacific, as great trains of battle-bound freight hurry westward in support of fighting forces.

For here mighty GM Diesel freight locomotives are writing a brilliant record of accomplishment over steep and twisting mountain grades.

Hauling greater tonnages faster and at lower cost, they are showing today what tomorrow can bring when whole lines are GM Dieselized. Then this momentous power will usher in an era when freight will travel faster, passengers ride with greater comfort, speed and luxury, and the whole land benefit from lower railroading costs.

ON TO FINAL VICTORY
BUY MORE WAR BONDS

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GENERAL MOTORS
DIESEL POWER

LOCOMOTIVES . . . . . ELECTRO-MOTIVE DIVISION, La Grange, Ill.

ENGINES . . 150 to 2000 H.P. . . CLEVELAND DIESEL ENGINE DIVISION, Cleveland 11, Ohio

ENGINES . . . 15 to 250 H.P. . . . . DETROIT DIESEL ENGINE DIVISION, Detroit 23, Mich.

Trains

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Naome Bauer — Desk Editor
Julia Bursch — Art Editor
H. H. Kirtland — Business Manager
R. J. Fakler — Plant Superintendent

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American railroads produce the world's most efficient common-carrier mass transportation and are the foundation of our country's industrial productivity.

TRAVEL advice for this summer and fall can be accurately expressed in one word—"Don't."

The five-day Pullman reservation limit and the removal of all Pullmans on runs of less than 450 miles called public attention to a situation that was already acute. It would be necessary to redeploy in 10 months troops that had been originally moved overseas during a period of 36 months. The army announced that it would need for special moves 50 per cent of the Pullmans which remained in regular service, and, as military personnel also comprise about one third of all passengers on regular trains, this means very little sleeping car equipment left for civilians.

The 450-mile rule was effective July 15 and meant the removal of some 895 sleepers from many of the country's most popular overnight runs. It also meant drastic reassignment of cars, for the Army wanted cars with the most capacity, meaning the standard open-section sleepers. Room cars from short runs were moved up to replace open-section cars on long distance trains.

The Pennsylvania Railroad's heavily traveled *Edison* between New York and Washington became a mail and express train and disappeared from the public timetables. The all-Pullman *New York and Washington Express* became an overnight coach train. The *Pittsburger*, solid Pullman between New York and Pittsburgh, became a reserved seat coach train on the same schedule. No. 12, which carried a Detroit sleeper to the Wabash connection at Fort Wayne, became solid mail and express, while coach passengers now ride the slightly earlier *Southland* to Fort Wayne.

The all-Pullman *Montreal Limited* of the New York Central and the Delaware & Hudson was cancelled, leaving coach service on another train by the same route. The Central's *Forest City* between Chicago and Cleveland is cancelled while the *Motor City*, Chicago-Detroit, and the *Genesee*, Buffalo-New York, have been replaced by afternoon coach trains. On the bulk of overnight trains carrying both coaches and Pullmans the removed sleepers are being replaced by additional coaches where the coaches can be had, but the supply of coaches was already near rock bottom in June when the Army asked all roads to form a pool of 500 coaches assigned to east coast military service. Coach trains in all parts of the country felt this order and standing in aisles and vestibules is now common in midweek even where it before was only a weekend expedient.

The 450-mile limit on sleepers applies via the shortest rail route between cities, thus causing some withdrawal of sleepers from competing routes of slightly over 450 miles. For instance, the C&NW had to take Pullmans off its busy *Ashland Limited's* 452-mile run because competing Soo Line is 435 miles. Among the runs just on the safe side of the limit are Los Angeles-San Francisco, Chicago-Omaha and Chicago-Kansas City.

Railroad passenger men are afraid the order will hit business men the hardest because they are the largest users of short run sleepers. If they sit up all night they will be unable to accomplish much the next day, and if they travel on daytime coach trains they'll lose time that way. But railroad people and business travelers alike are taking the order graciously, realizing the cars must stretch to do the military job. The passenger men are holding their breath for further curtailment orders.

Susquehanna Now All Diesel

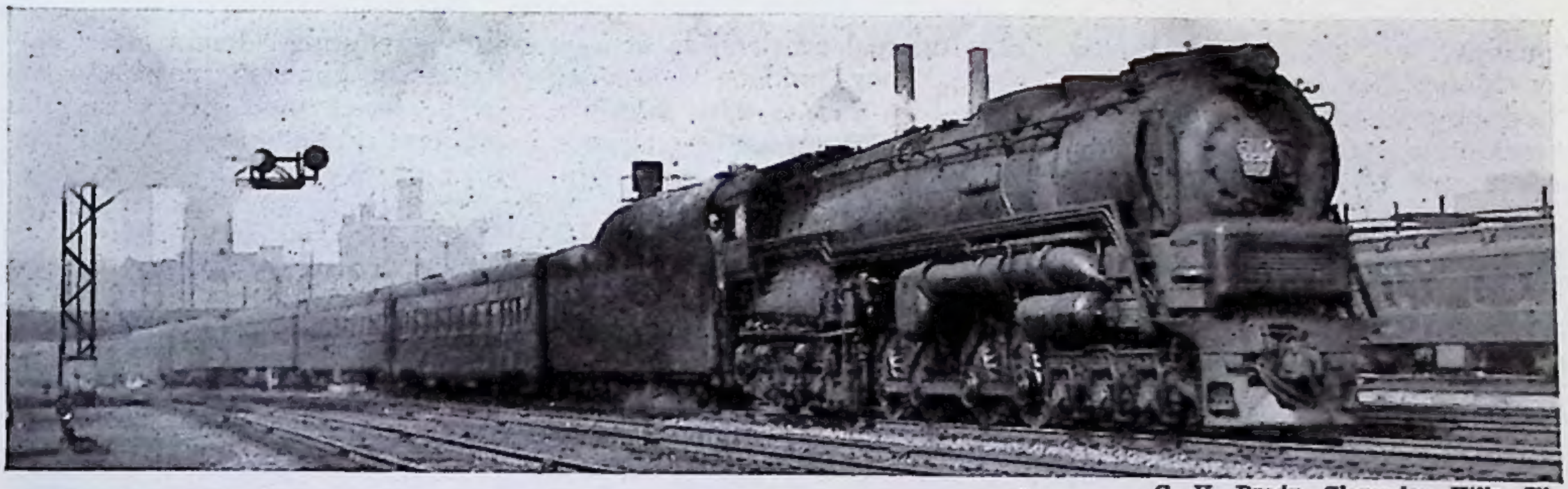
The New York, Susquehanna & Western early in June became the first Class 1 railroad to be completely operated by internal combustion power. It is now operating six Alco 1000 horsepower switching locomotives and 10 Alco 1000 horsepower road locomotives. Twelve of these are equipped for multiple-unit operation. Six motor rail passenger cars are also used.

Longest freight haul on the Susquehanna is about 100 miles and most of the business is short haul or switching and transfer. The passenger business is essentially suburban, both to the Erie station in Jersey City and to Susquehanna Transfer where passengers change to railroad buses for a direct Times Square connection. The road locomotives are equipped with boilers for steam heating and are geared for a maximum speed of 60 miles an hour. The same locomotives handle suburban trains during rush hours and work on freight otherwise. Twenty-five steam locomotives have been sold since the first Diesels were purchased in 1942, and one Pacific and four Decapods are now retained in storage to protect against unforseen emergencies.

Train Limit Law Invalid

The United States Supreme Court has ruled invalid the Arizona train limit law which before the war restricted freight trains within the state to 70 cars and passenger trains to 14 cars. This will enable the Santa Fe and Southern Pacific to continue the wartime efficiency of uniform train lengths across their entire east-and-west main lines.

In the majority opinion, the court held that an examination of all relevant factors made it plain that the interest of the state of Arizona under its police power was outweighed by the interest of the nation in an adequate, economical and efficient transportation service and that, therefore, the national interest must prevail. The opinion also held that the Arizona law, "viewed as a safety measure, affords at most, slight and dubious advantage, if any, over unregulated train lengths, because it results in an increase in the number of trains operated and there is a consequent increase in train accidents of a character more severe than those due to slack action."



C. H. Brady, Clarendon Hills, Ill.

The Pennsylvania's direct-drive steam turbine locomotive is now in regular service between Chicago and Crestline, O., going east each day on the Trail Blazer and west on the Admiral. The men using the locomotive are quite enthusiastic about it, although no official announcements have been made about the results of the experiment.

Illinois Central Speeds Trains

The Illinois Central is not waiting for the end of the war to make improvements in its passenger schedules and has announced the speeding up of a number of trains including the Chicago - St. Louis *Daylight*, which is now 40 minutes faster, the Chicago-Waterloo *Land o' Corn*, now 15 minutes faster, the Sioux City - Chicago *Iowan*, now 30 minutes faster, the Freeport - Chicago *Sinnissippi*, 15 minutes faster, and the Chicago-Florida *Seminole*, 55 minutes less running time.

Most interesting schedule revision is in the timing details of the Chicago-New Orleans *Panama Limited*. Overall schedule is not changed, but many intermediate revisions have been made to give the train more time on curving or hilly sections of line and less time on straightaways, thus providing greater passenger comfort. Twelve minutes were cut on the straight and level Chicago-Carbondale stretch, where the Panama now averages a consistent 65.5 miles an hour stop to stop.

Budd to Build Sleepers

The Edward G. Budd Manufacturing Company will manufacture a complete range of all-room sleeping cars in its huge new plant in northeast Philadelphia. The first design announced is a cabin car, which will have 22 individual rooms all on one level. This will compete with the Pullman roomette car, which has 18 rooms on one level, and the Pullman duplex roomette car which has 24 rooms on two levels. The car is a little longer, 85 feet overall, and has beds 6 feet 4 inches long and 35 inches wide.

Before the war Budd featured coaches for overnight as well as daytime travel and built very few sleepers. The court order separating the Pullman Company, sleeping car operating company, and the Pullman Standard Car Manufacturing Company, gives Budd hope of capturing more of the sleeping car business with its all-stainless steel designs.

The new plant had been operated by Budd for the government, but by fall it will be building the first stainless steel Budd passenger cars since late 1941.

Locomotive Notes

With the recent delivery of 15 Diesel units the Florida East Coast completely Dieselized its passenger service, except for mail and express trains 29 and 30, making all local stops between Jacksonville and Miami. . . In addition to the passenger Diesels for *Hiawatha* service the Milwaukee has ordered 20 1000 horsepower switchers and five 5400 horsepower freight locomotives which may be used to supplement the electrics over the Rocky Mountains if military traffic makes it necessary. . . Contrary to rumors, the New York, Ontario & Western does not have a program of complete Dieselization. . . Some of the Mountain type steam locomotives being replaced by Diesels on the O&W have been sold to the Bangor & Aroostook.

The New York Central is inquiring for 4-4-4-4 rigid frame steam locomotives. No details are available, but this is basically the same type locomotive as the immensely successful Pennsylvania T-1, which is now being built in

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Train order signal.

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quantity. . . . . The Boston & Maine has ordered 10 4000 horsepower locomotives from Electro-Motive, eight for itself and two for Maine Central. . . . The Union Pacific, Southern Pacific and Chicago & North Western have ordered a 6000 horsepower Diesel locomotive for protection of passenger runs; the UP and C&NW are buying an identical 6000 horsepower locomotive and UP is buying a 4000 horsepower locomotive and three 2000 horsepower units. The larger locomotives are for use between Chicago and the Pacific Coast, and the 2000 horsepower units will be used to make 6000 horsepower locomotives out of the 4000 horsepower locomotives now on the Kansas City-Denver run. . . . The Seaboard has ordered 14 Electro-Motive passenger Diesels. . . . The Texas & Pacific is inquiring for two or three steam locomotives of 4-4-4-4 wheel arrangement, again following the success of the experimental Pennsylvania locomotives of that type. . . . On May 8 Santa Fe's fleet of Diesel passenger locomotives crossed the 20 million mile mark. . . . Boiler tests on the experimental steam turbine-electric locomotive being developed jointly by the nine largest coal hauling roads, General Electric and Babcock and Wilcox, were made early in June. Pulverized coal is used as fuel to generate steam at 650 pounds pressure. The horsepower is 6900, same as the Pennsy S-2.

Diesels for Hiawatha

The country's fastest steam-powered train will be completely Dieselized with the delivery of five 4000 horsepower Diesel locomotives to the Milwaukee Road this October for *Hiawatha* service. At present two of the four Twin Cities *Hiawathas* are steam powered and two are Dieselized. The two Diesel locomotives make round trips daily, returning overnight on mail trains 56 and 57. The additional Diesels will not only take care of the other two Twin Cities trains, but also the *Midwest Hiawatha* between Chicago and Omaha.

The *Hiawathas* started 10 years ago as six-car trains pulled by specially designed oil-burning steam locomotives of 4-4-2 wheel arrangement. These engines cruise easily at 120 miles an hour, and have unusual acceleration at high speed. They produce everything needed as far as fast schedule, and handle trains up to nine cars, while newer streamlined coal burning 4-6-4's move 15-car trains on *Hiawatha* time. Thus performance is hardly the reason for complete Dieselization. More likely it is operating results in terms of dollars and cents. Milwaukee Road has had plenty of opportunity to compare, with 4-6-4's and Diesels on nearly identical runs for the last four years.

What's Become of—

The Denver & Rio Grande Western's two two-car *Prospector* streamliners which operated between Denver and Salt Lake City before the war are now out of service. Because of their small capacity and interference with other traffic they were taken off the run when war traffic grew. Between Salt Lake City and Denver the *Prospector*, carrying only 68 passengers, would meet or pass 57 trains on regular schedule, as well as many extras. This was not conducive to good operation under wartime conditions.

Railfan Trolley Line

A group of railfans has organized a corporation for the purchase of some as yet unselected electric line which faces abandonment. The line would be continued in operation under railfan management with the possibility of showing that enthusiasm and aggressive policies can make such a line profitable.

Capital to the extent of nearly $6000 has been definitely pledged and many railfans have pledged support when the plans become more definite. Persons interested can contact Lt. E. L. Tennyson, 71 Washington St., East Orange, N. J.

Pittsburgh Parade

At one o'clock in the morning, when the nearby portion of Pittsburgh's Golden Triangle is asleep, the Pennsylvania station is alive with hundreds of moving feet and with dozens of slowly moving trains. The waiting room benches are crowded, making a strange contrast to the nocturnal cleaners who busily mop the floor while crowds move from one bench to the next to keep out of the way. The lunch counter and bar do a thriving business hours after similar establishments in nearby streets have closed their doors for the night. For Pittsburgh is a crossroad of the Pennsylvania's overnight fleets, and when most people sleep the trains run through the station like street cars.

Things really begin to pop around 9:55 with the departure of the *Manhattan Limited* for New York. At 10 o'clock a Greensburg local follows it out over the Pittsburgh Division, and at 10:05 the *Iron City Express* leaves for New York and Washington, and No. 19 arrives from New York. A slight pause follows until 10:35, usually filled by extra sections and a troop train or two. But from 10:35 on the train board looks something like this:

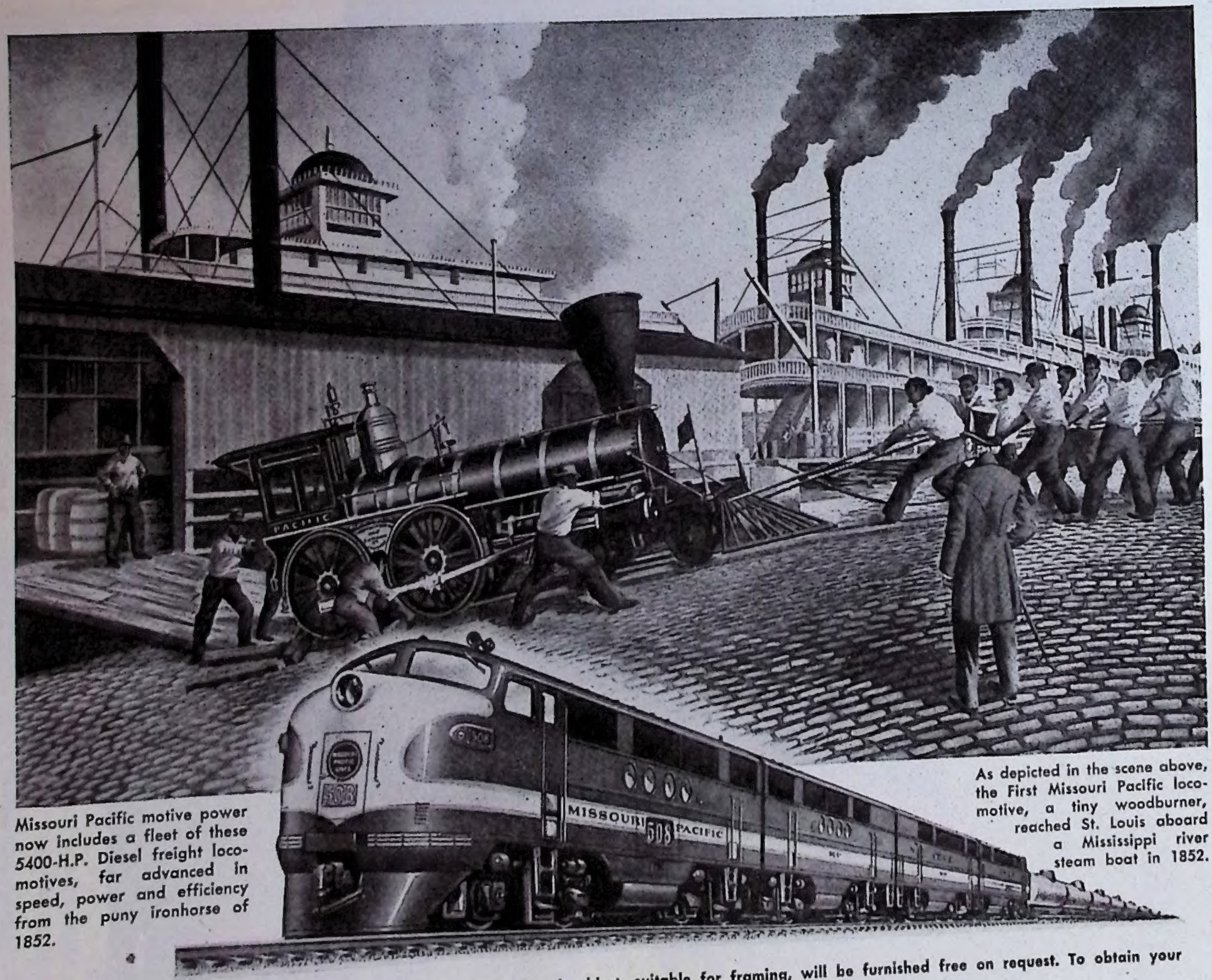
10:35 Eastbound The Statesman
10:45 Eastbound The American
10:52 Eastbound Derry local
11:00 Eastbound The Pittsburgher
11:17 Eastbound The Clevelander
11:20 Westbound Pennsylvania Limited
11:25 Westbound Derry local
11:25 Eastbound Philadelphia Night Express
11:35 Eastbound The Admiral
11:56 Eastbound The Red Arrow (New York)
12:03 Eastbound Cincinnati Limited
12:08 Eastbound The Red Arrow (Washington)
12:16 Eastbound The General
12:39 Eastbound First Section Liberty Limited
12:25 Eastbound Greensburg local
12:25 Westbound The Admiral
12:34 Eastbound Second section Liberty Limited
12:57 Westbound The Red Arrow (New York)
1:06 Eastbound Broadway Limited
1:12 Westbound The Red Arrow (Washington)
1:20 Westbound Cincinnati Limited
1:28 Eastbound Spirit of St. Louis
1:28 Westbound First section Liberty Limited
1:36 Eastbound Trail Blazer
1:38 Westbound Second section Liberty Limited
1:47 Eastbound Spirit of St. Louis
1:47 Westbound Trail Blazer
2:04 Eastbound The Jeffersonian
2:13 Westbound Broadway Limited
2:18 Westbound Spirit of St. Louis
2:26 Westbound The Jeffersonian
2:35 Eastbound The Pennsylvanian
2:38 Westbound Spirit of St. Louis

After which comparative calm settles upon the gloomy space out under the high arch of the trainshed and no more trains disturb the night until 3:10 when local No. 682 leaves for the east. And that, for Pennsylvania Station in Pittsburgh, is a long period without trains!

Dining Car Note

On four successive days recently I had omlet for lunch on four railroads, Milwaukee, NYC, Erie and Pennsylvania. I am thinking of writing a book, "Traveling America on Omlets."

A. C. Kalmbach.



Missouri Pacific motive power now includes a fleet of these 5400-H.P. Diesel freight locomotives, far advanced in speed, power and efficiency from the puny ironhorse of 1852.

As depicted in the scene above, the First Missouri Pacific locomotive, a tiny woodburner, reached St. Louis aboard a Mississippi river steam boat in 1852.

A full-color, 11 by 9-inch reproduction of this interesting railroad subject, suitable for framing, will be furnished free on request. To obtain your copy address the Missouri Pacific Lines Advertising Department, 1400 Missouri Pacific Building, St. Louis 3, Mo.

Ludington is an important railhead of Pere Marquette, but not the end of the line. From here the large Lake Michigan car ferries, which can load as many as 34 cars, extend service across the lake to Milwaukee, Manitowoc and Kewaunee. Cars are pushed onto the ferries by flat cars so switch engines need not go upon the ferry apron. The ship in the photos is the City of Saginaw 31, driven by a turbo-electric drive. City of Midland is latest ferry.

The illustrations:

All the photographs with this story except locomotives on page 20 were taken by William M. Rittase, a very capable commercial photographer with offices in Philadelphia. He illustrated the Pere Marquette 1943 annual report and about half of the 1944 report, and regularly does advertising photography for General Motors, Dupont and other nationally known corporations.

PERE MARQUETTE

BY GEORGE W. HILTON*

Illustrations by Wm. W. Rittase.

How a road which was born of the local Michigan lumbering and agricultural traffic has successfully made the transition to an efficient interline carrier.

The traveler of 40 years ago who rode the Pere Marquette remembers a rural railroad which was as deeply rooted in Michigan as the apple trees that flourish there. Its most important freight was lumber from Michigan forests. Its passengers were farmers going to market and vacationists destined for Lake Michigan resorts.

Today, all but a shadow of the local lumber business has gone and the farmers and tourists have taken to the highways, but Pere Marquette lives on in better physical and financial condition than at any time in its history. Within the last 20 years it has changed from an originating carrier of fruit, salt, lumber, and miscellaneous farm products to a fast freight bridge line of national importance. Where little 2-6-0's once pulled the produce of Michigan to market, powerful Berkshires now highball the interline freight that is the lifeblood of a modern railroad.

Twin mainstays of the present day Pere Marquette are the Detroit-Chicago and Toledo-Ludington routes. The Detroit-Chicago main line begins in ancient Fort Street Union Station, Detroit, and threads its way past railroad yards and through an industrial district to Plymouth, 25 miles west. At Rougemere, home of the immense River Rouge Ford plant, the railroad maintains a yard of 1200 car capacity and Diesel and freight car repair shops. The territory between Rougemere and Plymouth is of ever-increasing industrial importance and is served by no other railroad. At Plymouth, intersection with the Toledo-Ludington Division, the main line narrows from double to single track. East of Grand Rapids, it returns to double track only in Lansing and between Grand Rapids and Seymour.

In Grand Rapids, hub of Pere Marquette's lines in the United States, the long Petoskey Division, whose lumber originations once supported the whole railroad, intersects the Detroit-Chicago iron. Twenty-three miles to the east, at Elmdale, the Saginaw-Grand Rapids secondary main also converges with the Detroit Division.

Wyoming Yard in Grand Rapids is the most important freight classification point on the system. Today 2500 to 3000 cars daily pour through Wyoming's 17½ miles of track to be classified, eastbound, for Detroit, Toledo, and Buffalo destinations, and, westbound, for delivery to the Chicago belt lines and western connections. Here also is large, well equipped Wyoming Shop, repair shop for all freight cars and all motive power used on the lines west of the Detroit River. St. Thomas shop services Canadian Division power.

The main line continues west out of Grand Rapids to Holland, junction with the Muske-

*The author is indebted to David Hill, Chicago railroad consultant, and to E. M. Whanger, assistant to the President of Pere Marquette, for valuable information and checking of the finished article.

gon-Allegan Branch. The high iron heads southward now through the rich fruit country of Western Michigan to New Buffalo. Except for six miles from Grand Rapids to Granville and 12 miles from Riverside to Vine, all of the Chicago Division is single track. An important branch runs south out of New Buffalo to La Crosse, Ind., connecting en route with every railroad eastbound from Chicago except the Erie. New Buffalo's mainline coaling station, water tank, and seven stall engine house are ample to care for the big 2-10-2's used on the branch's daily turnaround freight run and to service the turnaround runs between Grand Rapids and New Buffalo and between New Buffalo and the Chicago connections. Here all eastbound and westbound passenger and freight trains take coal and water to permit operation in and out of Chicago using the same quality of coal as used elsewhere on the road and for which the locomotives are drafted.

The Chicago entrance trackage rights begin at Porter,* Ind., 21 miles from New Buffalo, where Pere Marquette trains leave their own rails to travel for 18 miles over the multiple track main line of the New York Central before moving over to the B&O main at Pine Junction. At South Chicago passenger trains head straight west over the Rock Island to Brainerd Junction, almost at Chicago's western city limits, before heading north over the Baltimore & Ohio again as far as Baltimore Junction. Over the B&OCT they run north and east into the magnificently venerable trainshed of Grand Central Station. Freights use the Belt Railway of Chicago from South Chicago to Rockwell Street, Pere Marquette's own Chicago yard, and terminate three miles farther west in the Belt's Clearing Yard. Here the Belt services PM freight and yard locomotives in its own roundhouse. Passenger locomotives are serviced by the B&OCT in its Lincoln Street engine terminal.

The entire main line is heavily built with 110- and 112-pound rails laid with tieplates on treated oak ties and washed gravel or crushed stone ballast. Automatic block signals protect the entire distance and are supplemented by automatic train stop east of Grand Rapids. The brilliant searchlight signals of C.T.C. control operation from Trowbridge to Lansing, from Lake Odessa to Seymour (Grand Rapids), between Grandville and East Saugatuck, from Coloma to Riverside, and from New Buffalo to Porter. By the end of 1945 C.T.C. will be extended from New Buffalo at St. Joseph. Over one third of the main line, 106 miles, will then be so equipped.

Grades are moderate in both directions. Only on the six miles of .95 per cent grade west of Plymouth do westbound trains require helper service. Eastbound tonnage freights are helped from New Richmond to East Saugatuck over two miles of 1.23 per cent. Most other grades are short momentum climbs. A single locomotive customarily handles 3500 tons in either direction east of Grand Rapids and 3750 tons west.

The Toledo-Ludington Division begins in Toledo at suburban Alexis, junction with the New York Central, whose trackage the Pere Marquette uses inside the city for its passenger trains. As far as Romulus, Mich., where nine of the 10 Toledo-Detroit passenger trains switch over to the main line of the Wabash Railway to run into Fort Street over trackage rights, the division is double tracked and equipped with automatic block signals. As far as Carleton, 25 miles north of Alexis, Detroit-bound passenger trains of the Pennsylvania run over these tracks.

From Romulus to Flint, the division is single track, operated by manual block, timetable, and train order. Freight trains operate through Flint over the subsidiary Flint Belt Railroad, which avoids downtown Flint and serves several important industries on Flint's east side. Nearly all the Flint-Saginaw mileage is governed by the Mount Morris-Bridgeport C.T.C. system, one of the earliest C.T.C. installations in the United States.

The Ludington Division is all single track built in hill-and-dale fashion. Two stiff grades near Reed City hold freight tonnage handled by single locomotives to 2450, unassisted, in either direction. By double-heading between Ludington and Reed City, 48 miles, tonnage can be raised to 4400 in either direction. Manual block signals control movements over 90-, 100-, and 110-pound rail relaid from other divisions.

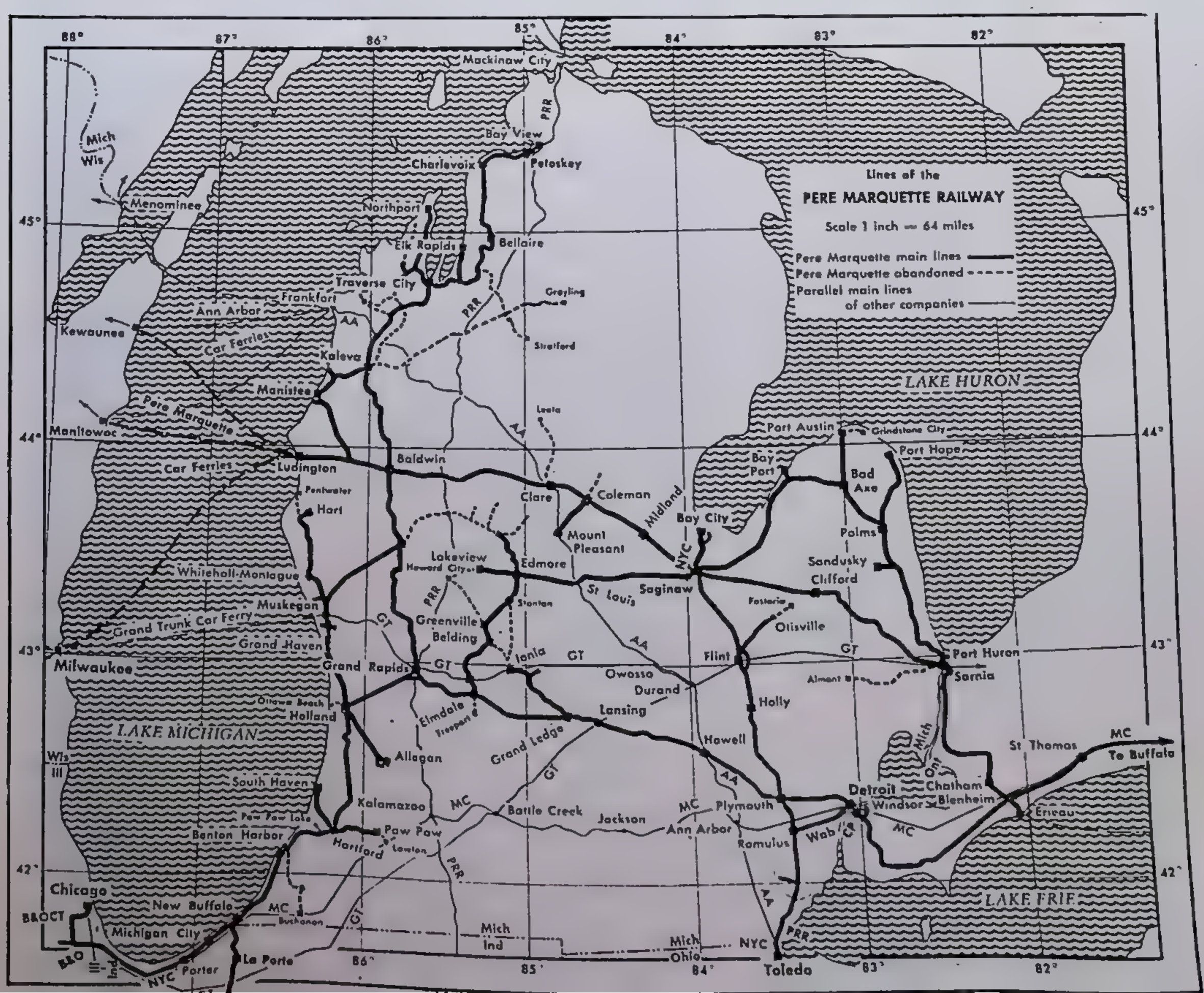
Of inestimable importance in the development of bridge traffic is the Canadian Division, extending from Walkerville to St. Thomas and from Sarnia to Erieau. Trackage rights on the Michigan Central run for 115 miles from St.

* This is the railfans' paradise. Spend an afternoon here to watch the Pere Marquette in action. A never-ending parade of PM, EJ&E, NYC, and MC freights and all the passenger trains you could desire whiz past hour after hour.

Thomas, Ont., to Suspension Bridge, N. Y. Erie tracks are used between Suspension Bridge and East Buffalo yard. Until comparatively recent years this division was of secondary importance, serviced only by a few Consolidations tugging small freights. Recently, however, an aggressive traffic department has built up through and overhead business to a point where the Canadian Division is operated on full mainline standards.

A strengthening of bridges and an enlargement of shop facilities at St. Thomas in 1942 now permit the use of Mikado locomotives which handle 3600 tons eastbound, 3200 tons westbound. Connection with the lines in the United States is made by two long, open car ferries operating between Boat Yard, Detroit, and the Windsor yard of the Canadian Pacific, in which the Pere Marquette has trackage privileges. These ferries made 15,280 trips in 1943, ferrying a daily average of 900 cars across the Detroit River. By the end of 1945 they will be supplemented by a new 400-foot ship now under construction.

The Pere Marquette is anxious to build up any potentially profitable branches into secondary main lines because it has discovered that a leaking 2-6-0 clanking down a weed-covered branch with the weekly freight may be picturesque but it is far from profitable. Typical of the branches that were life-giving arms in 1900 but became deadweight later, was a line running from Tappan, near Port Huron, to Almont, 30 miles away. In 1940, its last full year before abandonment proceedings were begun, it produced only $1980 of revenue but cost the neat sum of $29,641 to operate and maintain. Multiply this gross loss by the number of branches shown on the accompanying map and you'll have a rough idea of why Pere Marquette and its subsidiary, the Manistee & North-



eastern, have been chopping away branch mileage as fast as the I.C.C. will allow.

On the surviving branches operation varies from six day a week freight service on the Ionia line to irregular weekly service on the Hart branch. Passenger service has long since disappeared from all branches. Even mixed trains were discontinued during the lean '30's, with the solitary exception of the Walkerville (East Windsor)-Chatham run on the Canadian Division.

Operated as an autonomous set of branch lines is the Manistee & Northeastern Railway. Originally an independent line, it was built to connect the lake port of Manistee with the timberlands at Grayling, 100 or more miles northeast, and those north of Traverse City, some 50 miles up the lake shore. The decline of the Michigan lumber industry brought the abandonment of the long Grayling line and left the Traverse City route in precarious circumstances. The depression gave the road the coup de grace. In 1932 it passed into the control of the Pere Marquette, whose Grand Rapids-Petoskey iron it paralleled and criss-crossed in S-shaped fashion. The middle portion of M&NE was abandoned summarily in favor of using the Pere Marquette line as a connection between the two remaining branches out of Traverse City and the Manistee-Kaleva sector. Today, two passenger trains operate in each direction out of Manistee connecting at Kaleva with the Petoskey Division day local of the Pere Marquette. On the northern lines, a daily local serves the remaining trackage.

THE Pere Marquette itself is the result of a combination effected in 1900 between three predecessor corporations. The Chicago & West Michigan, largest of the three, operated from La Crosse, Ind., through Grand Rapids and Muskegon to the lumber country near Traverse City, Charlevoix, and Petoskey. The C&WM had troubles. It was completely dependent on a lumber traffic which had begun to decline fast in the 1890's. Its fruit and passenger traffic was usurped by Lake Michigan steamboats at nearly every major point. Worst of all, it had no entrance into Chicago and was forced to interchange its passengers and freight with the competitive Michigan Central at New Buffalo.

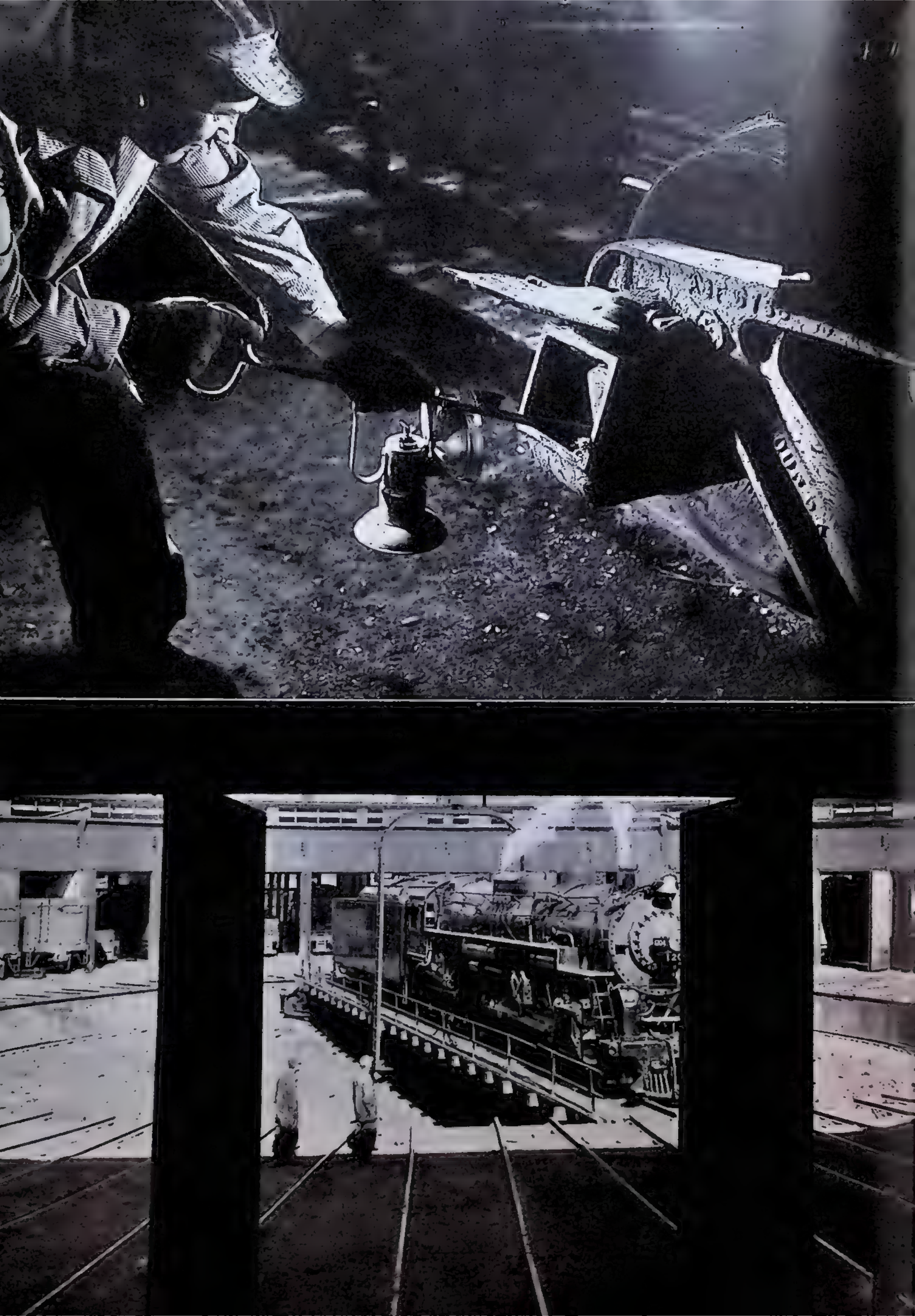
Both of the other railroads were also largely dependent on the lumber traffic originating in Michigan. The Flint & Pere Marquette's Toledo-Ludington main line syphoned some lumber off the C&WM at Baldwin and the Detroit, Lansing & Northern did the same as Grand Rapids. The Flint & Pere Marquette also boasted a bridge traffic of no staggering proportions between Toledo and Milwaukee, Manitowoc and Kewaunee, the cities served by its Lake Michigan car ferries. Whatever profit came from this business was dissipated by the branches east of Saginaw. The Flint & Pere Marquette operated the Saginaw-Port Huron main line and the various branches of the old Port Huron & Northwestern narrow gauge. It had spent a fortune converting the Port Huron & Northwestern to standard gauge but had never reaped enough traffic to make the effort worth while.

The Detroit, Grand Rapids & Western (successor in 1896 to Detroit, Lansing & Northern) had a potentially valuable main line between Detroit and Grand Rapids. It was, and is, considerably shorter than the Michigan Central and Grand Trunk between the same terminals. In 1900, however, the cities of Grand Rapids, Lansing, and Detroit had no more than begun the industrial development that has made them important. The disappearance of the lumber industry in central Michigan had made the branches nearly valueless. Like the Flint & Pere Marquette, the Detroit, Grand Rapids & Western was rapidly becoming destitute as lumber interchange with the Chicago & West Michigan declined.

The only solution to the joint problems of the three railroads was consolidation and extension. It was urgent to extend into Chicago and to build or borrow a route to the Niagara frontier. In 1903, the Lake Erie & Detroit River Railway was acquired and is still operated under lease as the Canadian Division. Two trackage agreements were negotiated, the first being that still in use allowing Pere Marquette to run freight over the Michigan Central main line between St. Thomas, Ont., and Suspension Bridge and Buffalo, N. Y. No local business is permitted.

On the west end, construction was begun toward Chicago from New Buffalo and was completed as far as Porter, Ind., by December, 1903. Because the cost of building farther west was prohibitive, Pere Marquette entered into

Pere Marquette passenger train No. 101, headed for Petoskey at the northern end of lower Michigan, crossing High Bridge between Baldwin and Traverse City. This bridge has been reinforced since original construction to permit the use of heavier equipment.



One of the little things which keep a railroad functioning smoothly is constant inspection. The dramatic night photograph shows a car inspector examining and adjusting the journal box packing on a freight car. The roundhouse scene shows one of PM's 1200 series Berkshire type freight locomotives on the turntable at Grand Rapids. Replacing of worn rail on main line by the use of Burro crane is shown above.

the trackage agreements it still uses and presumably will continue to use until their expiration in 2002.

THE development of a considerable volume of through traffic over the lines of Pere Marquette has taken 45 years and is far from finished. From earliest days, the interchange with the Cincinnati, Hamilton & Dayton (since 1909 the B&O) at Toledo has meant much to the railroad. It was not until Pere Marquette entered the incredible empire of the brothers Van Sweringen in the late 1920's that coal and other freight by the trainload began to pour from the Chesapeake & Ohio's Hocking Valley line at Toledo. In 1943 the Toledo connection with the C&O accounted for 73,000 loaded cars, by far Pere Marquette's most important connection.

Many of the 198,000 loads the railroad interchanged with all carriers at Toledo in 1943 were destined for its biggest on-line customer, the automotive industry. At Detroit, Rougemere, Lansing, Grand Rapids, Flint, Saginaw, and Bay City a large tonnage terminates at plants of Ford, General Motors, Nash, Reo, and others. At Flint, the huge Buick and Fisher Body No. 1 factories are served exclusively by Pere Marquette.

It is highly probable that the postwar era will see an increasing number of plants of this and other industries located beside Pere Marquette tracks. Shippers like the fast, dependable service Pere Marquette offers.

Best proof of the popularity of PM's freight service is the ever-increasing amount of bridge traffic raised through off-line solicitation. Even in 1943, a year of huge production in Detroit, the river car ferries accounted for twice as many cars as all Detroit on-line points of origination. Traffic through the Ludington gateway became so heavy during the '30's that in

1941 the Pere Marquette placed in service the Great Lakes' largest and finest car ferry, the City of Midland '41.

Named for the home of the big Dow Chemical Company plant, the City of Midland is the flagship of a fleet of six twin-screw, ice-breaking ferries, varying in capacity from 26 to 34 freight cars. They also carry passengers, largely motorists bound for Michigan resort lands and, in peacetime, many transcontinental tourists, with their motor vehicles. Passenger accommodations are on a par with the best on the Great Lakes and include staterooms, parlor bedrooms, lounges, and dining salons.

These ships give Pere Marquette traffic men one of their most potent talking points. They remember what other traffic men like to forget, that freight cars frequently take days to clear the congested Chicago gateway. Freight routed from the Northwest to Kewaunee, Manitowoc, or Milwaukee avoids Chicago entirely. Pere Marquette whisks it across the lake in 3½ to six hours, winter and summer, and dispatches it out of Ludington quickly, bound for Detroit, Toledo, and Buffalo.

Typical prewar schedule through the Ludington gateway was maintained by speedy time freight MS-4. Cars left Milwaukee at 9:00 p. m., Manitowoc at 11:00, and Kewaunee at 11:30 via the ferries and were highballed out of Ludington at 5:00 a. m. At 1:00 p. m., MS-4 nosed into Boat Yard, Detroit. The connection out of Plymouth arrived in Toledo at 3:30. MS-4 itself was hustled across the Detroit River and, after suitable reclassification, left Windsor at 4:00 p. m. By 1:00 a. m. it had crossed Ontario and was setting out cars for the Erie and Lehigh Valley at Suspension Bridge. Connections from the Erie's East Buffalo yard, where it terminated at 3:30 a.m., put cars in New York and Philadelphia 24 hours later, in Boston 30 hours later.

Service from Chicago was even faster. CDF-6 left Clearing at 11:00 p.m., was in Detroit 12:30 p. m. the next afternoon, arrived at Suspension Bridge at 10:45 p. m., and finished the run at East Buffalo at 2:00 a. m. Connections gave third morning delivery in New York and Philadelphia. The Canadian Pacific gives close connections to Pere Marquette freights from Windsor to eastern Canadian points.

The be-all-and-end-all of fast freight is the *Overnighter*, the famous Chicago-Detroit night freight. No. 40, the eastbound *Overnighter*, left Clearing at 8:00 p. m., switched at Rockwell Street, Porter, New Buffalo, Grand Rapids, and Lansing, changed engines and crews at Grand Rapids and still made the 336 mile trip in 9½ hours. L.C.L. freight received as late as 4:30 in Chicago was delivered in Detroit early the next morning. Equivalent westbound service was offered by No. 41 to match all these schedules. The war has made only minor changes in time.

As is true of most single track railroads which do a heavy freight business, passenger traffic is of secondary importance. Service to and from Grand Rapids is the chief intra-line item. On the east end of the line, the Detroit-Chicago day trains, Nos. 3 and 6, are supplemented by one other round trip between Detroit and Grand Rapids. This gives morning and late afternoon departures westbound, noontime and late afternoon departures eastbound. Running time is approximately 3½ hours.

On the west end, trains leave Chicago at 11:00 a. m., 5:15 p. m., and 11:30 p. m. for Grand Rapids. Westbound counterparts leave Grand Rapids at 12:30 a. m., 12:30 p. m., and 5:15 p. m. Both late afternoon and night trains connect with Muskegon locals at Holland. A single sleeper operates in each direction between Chicago and Muskegon: two or more run between Chicago and Grand Rapids, continuing to Traverse City and Petoskey via the Petoskey Division local train.

A typical prewar day train consisted of one or two headend cars, two comfortable salon coaches and a Pullman operated parlor-diner combination, hauled by a light Pacific. Today both day and night trains often consist of nine or 10 cars and have to be handled by Mikados west of Grand Rapids and by double headed Pacifics on the east end. Mikados cannot be run on the viaduct approach of the Detroit passenger station because of weight.

Pere Marquette's pride and joy of prewar summers was the deluxe *Resort Special*. During summer seasons it ran out of Chicago six nights a week, Detroit three nights a week, arriving in Traverse City, Charlevoix, and Petoskey early the following mornings. Although travel to the near-Chicago resorts between New Buffalo and Muskegon has long since passed to the automobile, much of the traffic to the northern resorts remained in the grip of the *Special* and of the Pennsylvania's competitive *Northern Arrow*. The distance made automobile commutation unbearably time consuming. The *Resort Special* frequently carried as many as a dozen cars on week-ends, re-

quiring Mikado road engines all the way from Chicago to Petoskey.

Pere Marquette's only inter-line passenger trains move over the Toledo Division. The B&O's *Ambassador,* night train to Louisville, *Great Lakes Limited* and the C&O's *Sportsman* are handled by Pere Marquette crews between Detroit and Toledo. All these trains except the Diesel-powered *Ambassador* use Pere Marquette steam locomotives. North of Plymouth, this division is served by two Detroit-Saginaw locals in each direction. Out of Saginaw, home of the railroad's passenger car shops, a day local makes a round trip to Ludington.

To operate all of this passenger and freight service requires a fleet of 296 steam and six Diesel engines. Newest and best road engines are the 39 1200 class Berkshires. Pere Marquette depends on the big 2-8-4's to maintain the tight schedules of nearly all Chicago-Detroit freights. They are also used on Toledo-Saginaw runs and, as soon as a new million dollar bridge over the Saginaw River is completed, will be able to operate between Saginaw and Ludington. They are one of the top leaves of a family tree planted in 1930 when the Chesapeake & Ohio brought out its famous 3000 series 2-10-4's. Various features of the C&O engines, including 69-inch drivers, 34-inch cylinder stroke, outside journals on the leading truck, Baker valve gear, and the placing of the steam dome in front of the sand dome, were incorporated in 1934 into five 2-8-4's built by Alco for the Nickel Plate, and, in 1937, into 15 heavier 2-8-4's built by Lima for the Pere Marquette. This was the original 1200 series. Only five, 1211 to 1215, were equipped with boosters. Lima delivered 12 more without boosters to the Pere Marquette in 1941. These were slightly heavier than the first, but otherwise identical. The 12 delivered in 1944 were again heavier, and again the last five, 1235 to 1239, were equipped with boosters. The last order, like the 40 Berkshires built by Alco from Pere Marquette plans for the Chesapeake & Ohio in 1943-4, has the steam dome in the conventional place behind the sand dome, reversing a C&O custom of 15 years standing which was unique in modern locomotive design. All of the 1200 class engines have 26 x 34-inch cylinders, 69-inch drivers, and 245 pounds of steam pressure. Although they haul fast freights at a top speed of 50 miles per hour with ease, they are never used in passenger service. Clearance limits keep

Pickup of train orders from a Hendrickson train order standard is shown in these two photos. The freight train above is leaving Grand Rapids yard and the order machine is in loaded position, with the engineer about to take his orders from the upper hoop. The conductor on the caboose takes his orders from the lower hoop.

them out of Chicago's Grand Central and weight limits bar them from Detroit's Fort Street.

The 55 1000 class Mikados, standard mainline freight engines before the coming of the Berkshires, are now the dual service locomotives of the railroad. In addition to passenger service on the Chicago-Petoskey Division, they see freight service on all divisions. Mikes assigned to the Canadian Division are specially equipped with large tenders, automatic train stop equipment and water scoops for use on Michigan Central tracks.

Most numerous locomotives are the 85 Consolidations built from 1903 till 1911 varying in weight from 168,000 to 236,000 pounds. The largest hold forth in way freight service on main lines and the smallest operate the various trains running on what is left of the branch lines.

The 15 1100 class 2-10-2's are typical drag engines of the World War 1 era of locomotive design. They exert their 64,500 pounds of tractive effort on freight of all mainline divisions in the United States. Two even heavier 2-10-2's, 1198 and 1199, are also in use, one each on the Toledo and Chicago divisions. They boost big 100 square foot grates and 74,450 pounds of tractive effort.

The booming freight business keeps 65 eight-wheel switchers busy at major cities and, especially, at ferry aprons. These are all fairly

Two of the 1200 series Berkshires and a Consolidation are being coaled at the Grand Rapids coaling dock. Pere Marquette is proud of the fine grade of coal it uses.

modern engines, dating from 1918 to 1930. The newest, 240 to 254, are exceptionally large, having 57,200 pounds of tractive effort. Eight six-wheel switchers have evaded the scrap heap and still operate about the system. Six Diesel switchers are used for industrial and yard switching in the Detroit area. Ten more are now on order with Electro-Motive for use at Ludington, Detroit, Waverly (Holland), and Chicago.

Only passenger engines on the Pere Marquette are 27 Pacifics of the 700 series. Five of them boast 38,700 pounds of tractive effort, but none of the rest have over 31,050. This is entirely adequate in peace time, as no passenger train except the *Resort Special* on week-ends was long enough to require more than a light Pacific.

Postwar plans, however, call for a passenger service beyond the capacity of these locomotives. Pere Marquette has ordered two seven-car streamliners to furnish three daily trips in each direction between Detroit and Grand Rapids on a greatly accelerated schedule. The trains will be called the *Pere Marquettes* and handled by 2000 horsepower Diesel-electrics.

When the war is won and railfan excursions may be made without transcending the realms of conscience, ride one of the new *Pere Marquettes* or one of the other passenger trains. It will be an interesting trip and you will see a superb railroad in action.

The Wyoming locomotive back shop in Grand Rapids is capable of making heavy repairs on all classes of locomotives. Notice the Berkshires, with their large sand domes, in background.

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Locomotives of the Pere Marquette

Class	Numbers	Type	Driver diam., in.	Wt. on drivers, lbs.	Cyl. diam. and stroke, in.	Steam pressure, lbs.	Tractive effort, lbs.	Grate area, sq. ft.	Weight,‡ lbs.	Builder	Date built	No. in service
C	601-625	2-8-0	61	193,500	22x30	200	40,500	56.5	217,500		1910-1	25
C-1	351	2-8-0	57	162,000	21x26	200	34,200	54.5	181,500		1903	1
C-2	275-276, 278, 280, 281, 368, 369, 371, 373-375	2-8-0	57	153,000 to 159,000	20x28	200	33,400	44.4	174,500		1905	10
C-2	298, 299, 302-304, 309, 312, 313	2-8-0	57	153,000 to 159,000	20x28	200	33,400	44.4	179,000		1905	8
C-2	323	2-8-0	57	153,000 to 159,000	20x26	200	31,000	54.4	188,800		1904	1
C-2	501-512	2-8-0	57	153,000 to 159,000	20x28	200	33,400	44.4	175,500		1909	12
C-16	240-254	0-8-0	52	240,000	25x28	200	57,200	46.9	240,000	Alco	1930	15
MK	1001-1010	2-8-2	63	220,000	27x30	185	54,600	70.3	285,000		1913	10
MK-1	1011-1040	2-8-2	63	220,000	26x30	200	54,700	66.7	292,000	Lima	1919	30
MK-2	1041-1050	2-8-2	63	230,000	26x30	200	64,700#	66.7	319,000		1927	10
MK-6	1095	2-8-2	63	242,000	27x32	190	59,800	70.0	328,600		1911	1
MK-6	1096-1097	2-8-2	63	242,000	27x32	190	59,800	70.0	328,600		1912	2
MK-6	1098-1099	2-8-2	63	242,000	27x32	190	59,800	70.0	328,600		1913	2
N	1201-1210	2-8-4	69	278,000	26x34	245	69,350	90.3	436,500	Lima	1937	10
N	1211-1215	2-8-4	69	278,000	26x34	245	83,750#	90.3	445,500	Lima	1937	5
N-1	1216-1227	2-8-4	69	277,600	26x34	245	69,350	90.3	442,500	Lima	1941	12
N-2	1228-1234	2-8-4	69	278,200	26x34	245	69,350	90.3	448,000	Lima	1944	7
N-2	1235-1239	2-8-4	69	278,000	26x34	245	83,750#	90.3	456,100	Lima	1944	5
P-2	701-705	4-6-2	77	139,000	22x26	200	27,800	44.1	216,000		1910	5
S	1401-1410	0-8-0	51	220,000	25x28	185	52,900	46.9	220,000		1920	10
S-1	1300-1309	0-8-0	51	204,000	22x28	200	44,300	47.5	204,000		1918	10
S-1	1310-1329	0-8-0	51	206,500	22x28	200	44,300	47.5	206,500		1923	20
S-1	1330-1339	0-8-0	51	220,600	22x28	210	47,400	47.5	220,600		1929	10
S-2†	459, 467	0-6-0	51	132,000	19x26	170	26,100	31.4	132,000		1905	2
S-2†	473	0-6-0	51	136,000	20x26	170	28,900	31.4	136,000		1910	1
S-2†	475, 478, 482, 483	0-6-0	51	136,000	20x26	170	28,900	31.4	136,000		1911	4
S-2†	478	0-6-0	51	136,000	20x26	180	30,600	31.4	136,000		1911	1
SC	901-925	2-8-0	57	210,500	25x30	180	50,350	56.8	236,500		1911	25
SF	1101-1115	2-10-2	57	264,000	26x32	200	64,500	66.8	321,000		1918	15
SF-6	1198, 1199	2-10-2	63	293,560	29x32	205	74,450	100.0	374,100		1919	2
SP	706-710	4-6-2	77	139,500	22x28	200	29,900	44.1	218,000		1911	5
SP-2	725-729	4-6-2	73	156,000	25x28	190	38,700	56.0	257,000		1914	5
SP-3	711-722	4-6-2	77	149,000	23x28	190	31,050	50.4	243,000		1920	12

#Tractive effort includes booster. Without booster it is the same as that immediately above.
†Equipped with slide valves. All others have piston valves.
‡Without tender.

Diesel—Electric Switchers

Class	Numbers	Horsepower	Builder	Date	Number of engines
DE-1	10	600	Electro-Motive	1939	1
DE-1A	11	600	Electro-Motive	1942	1
DE-2	51-54	1000	Electro-Motive	1942	4

Total: 293 steam, 6 Diesel-electric locomotives. 12 Diesel-electric on order.

←Locomotives at work.

The light Pacific on opposite page is ready to pull the C&O Sportsman out of Detroit's Fort Street Union Station. PM handles the train to Toledo. The 1208 is in the siding at Trowbridge with a Chicago-Detroit time freight.

Top photo, Railroad Photographic Club, 47 Royal St., Allston, Mass.; bottom, A/C Emery J. Gulash, San Marcos, Tex.

In the Blue Ridge Mountains

A Southern Railway Mountain type passenger engine, painted an attractive green and trimmed in white, makes a framing type photograph emerging from one of the seven tunnels on the line at Asheville, N. C.

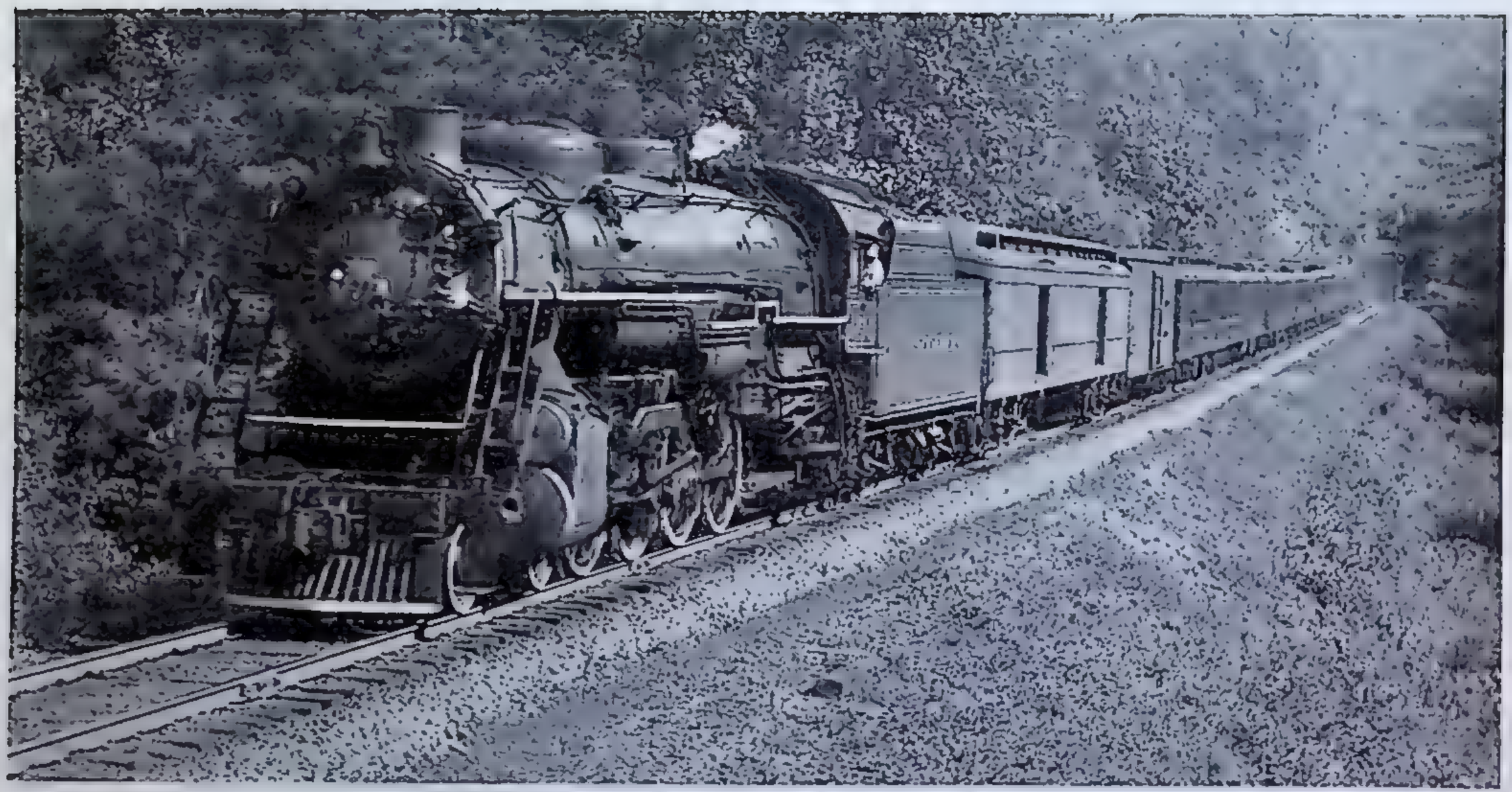
PHOTO STORY BY FRANK CLODFELTER

In eastern America's highest mountain country lies a 12-mile stretch of roadbed that ranks second to none as a rail cameraman's paradise. Etched out of North Carolina's Blue Ridge Mountains, between Old Fort and Ridgecrest, the Southern Railway winds a dozen miles to cover the distance a crow flies in three. Wind-swept 6684-foot Mt. Mitchell, tallest peak east of the Mississippi, can be seen on a clear day as she rises above the fog shrouded valleys.

A unique feature of this rail trip is the seven views of Andrews Geyser which shoots water skyward for approximately 250 feet. Quite often passengers are heard to remark: "There's another geyser," until some member of the train crew explains that it's another view of the same geyser. The geyser was built as a memorial to honor Col. A. B. Andrews, under whose guidance the railroad was completed in 1888, and the five corners of the pool represent the number of years required to complete the construction of the rail job.

The railroad crosses Mill Creek in several places where the clear bubbling water rushes over rocks worn to every shape and size, and where rainbow and speckle trout abound. The steep grades of 1.83 to 2.10 per cent and the horseshoe curves necessitate a maximum speed of 30 miles an hour for the 327,000 pound Mountain type passenger engines and 15 miles an hour for the 378,000 pound Santa Fe freight engines.

The line doubles back upon itself to gain elevation above Dendron, N. C. Grades as heavy at 2.1 per cent and the sharp horseshoe curves limit speed to 30 miles an hour.



Train No. 16, the Asheville Special, headed for Washington, comes out of Licklog Tunnel on the Southern Railway's line through the heart of the Blue Ridge Mountains in North Carolina. Photographer Frank Clodfelter is an engineer on this division.

Quiz

Where do the railroads go?

In this quiz there are eight groups of names of towns and cities and each group is associated with a particular railroad. Most of the towns in a group are on the lines of the railroad indicated but, in each group, three places are wrong. Write down the wrong names and compare your list with the one on page 41. For example, if you think the C&NW in the first group does not go to Fargo, write it down.

Chicago & North Western	Albert Lea, Minn.	Fargo, N.D.	Mankato, Minn.
	Madison, Wis.	Iowa City, Ia.	Omaha, Neb.
	Duluth, Minn.	Lander, Wyo.	Sioux City, Ia.
Atchison, Topeka, & Santa Fe	Denver, Colo.	Keokuk, Ia.	St. Louis, Mo.
	El Paso, Tex.	Peoria, Ill.	San Diego, Calif.
	Galveston, Tex.	Phoenix, Ariz.	Wichita, Kan.
Erie	Cincinnati, O.	Niagara Falls, N.Y.	Sydney, N.Y.
	Cleveland, O.	Pittsburgh, Pa.	Waverly, N.Y.
	Fort Wayne, Ind.	Scranton, Pa.	Weehawken, N.Y.
Baltimore & Ohio	Buffalo, N.Y.	Peoria, Ill.	Rochester, N.Y.
	Charleston, W.Va.	Fort Wayne, Ind.	St. Louis, Mo.
	Cumberland, Md.	Indianapolis, Ind.	Springfield, O.
Southern	Alexandria, Va.	Jacksonville, Fla.	St. Louis, Mo.
	Charleston, S.C.	Montgomery, Ala.	Savannah, Ga.
	New Orleans, La.	Nashville, Tenn.	Wilmington, N.C.
Canadian National	Detroit, Mich.	Lethbridge, Alta.	Sault Ste. Marie, Ont.
	Moose Jaw, Sask.	Nipigon, Ont.	Spokane, Wash.
	Halifax, N.S.	Prince Rupert, B.C.	Victoria, B.C.
Western Pacific	Battle Mountain, Nev.	Lovelock, Nev.	San Jose, Calif.
	Keddie, Calif.	Ogden, Utah.	Stockton, Calif.
	Klamath Falls, Ore.	Reno, Nev.	Wendover, Utah.
Wabash	Buffalo, N.Y.	Des Moines, Ia.	Omaha, Neb.
	Chicago, Ill.	Detroit, Mich.	Peoria, Ill.
	Cleveland, O.	Indianapolis, Ind.	Toledo, O.

Daily Except Sunday via the Roundhouse

On light local run with few passengers Santa Fe services motor car en route as wartime expedient

BY THURBER D. CATTON

This tale of unusual operating department ingenuity on the Santa Fe shows how one railroad dares to break tradition and keep trains running in spite of wartime difficulties.

TRAIN No. 13 on the Santa Fe may not be unlucky, but it certainly is unique. It starts its trip by backing up, and it takes its passengers onto a turntable and into an enginehouse, something that usually can't be included in a ticket routing.

No. 13, which leaves Dearborn Station, Chicago, in reverse, is no mere suburban train — on which such an eccentricity might be expected — but makes a 153-mile run daily to Pekin, Ill.

Although a gas-electric motor car, it is not equipped for rear-end operation as are some of these "gas buggies." The reason for its unconventional manner of leave-taking is the short layover which the timecard gives it at the terminal. The motor car is due in as No. 14 at 12:10 p.m., and is scheduled to leave exactly an hour later.

Adherence to schedules being what it is in wartime, the motor car has time only to unload and load its mail, baggage and express in the station, without bothering about other details. In fact, on the afternoon on which this writer boarded it the loading job ran overtime, and No. 13 still was in the station when the Santa Fe's *Chief* arrived on the dot at 1:25. The little motor car with its striped front end was quite a contrast to the glistening, luxurious coast streamliner, but even with its unique operation it does a job which serves its purpose just as adequately.

A string of empty express cars was coupled onto the motor car, giving it the appearance of a train nearly as long as the C&EI's *Dixie Limited* on the next track. But whereas a flood of passengers poured out the gate to board the latter, No. 13 drew only a trickle of about a dozen. These took their seats facing back toward the head-end station as though that were customary and sat listening to the thumps of the express being loaded in the front compartment or speculating on what time they would arrive at Streator.

At last the switch engine on the other end of the string of empties jerked them to a start, and No. 13 was under way, although not under its own power. This means the locomotive proceeded a few hundred yards when a halt was made with the passenger compartment directly under the overhead crossing of the Illinois Central's Omaha line swinging west from Central Station on the lake front. While the express cars were being cut off, a train rolled along overhead, undistinguishable as to its makeup in the worm's eye view of the under rigging available through the cross ties. A little neck craning, though, established that it was a troop train of the boxcar type sleepers.

Then a chugging noise up front indicated that No. 13 at last had started its own power plant. A moment later, the car started again, still in reverse, and moved slowly until it came to a stop squarely in the center of the roundhouse turntable. The turntable then turned counterclockwise, but it did not complete 180 degrees as might have been expected. Instead it stopped with the motor car's snout pointing into one of the engine stalls in the roundhouse. And in it went.

Here occurred the usual terminal servicing of the car, complete to washing the windows. A trainman explained that two cars are used, each getting this overhauling at the Chicago roundhouse on alternating days. The run ends at Pekin, terminus of a branch line. Next morning the motor comes back as far as Streator, on the main line. There it waits until a through train from Chicago arrives, then makes a local run to Fort Madison, Ia. The following morning it gets an early start from that Mississippi River crossing and returns to Chicago just after noon, which was where we came in.

Other occupants of the engine stalls during No. 13's brief stop-over there were 3400 type passenger engines, all oil burners but one.

After the car emerged from the roundhouse darkness into daylight, and had another whirl on the turntable, No. 13 began moving in the orthodox direction, cleared a few switches and found itself on the westbound main track.

It had passed the Santa Fe coach yard and the Pennsylvania crossing where all other roads from Dearborn Station swing south; then it really began to kick up its heels.

Rear end of the motor car is a made-to-order observation platform for railfans. It is an enclosed vestibule, with deep windows in the end panels, which make it a comfortable procedure in any but the bitterest of weather to stand there and watch the twin lines of rail stream out behind the speeding car. The truly polite observer will step aside out of the brakeman's way at each of the way stations—McCook, Willow Springs, Lemont, Romeo and Lockport — but he won't be bothered by many passengers getting on or off. Most of it is just the express handled at these stations.

The Santa Fe out of Chicago follows the South Branch of the Chicago River and then the Des Plaines River, in a generally southwesterly direction. The elevation is no more than 20 feet above Lake Michigan at any point, although the line crosses the divide between the Great Lakes and Mississippi basins. This fact is taken advantage of by a ship canal that parallels the tracks closely.

The Alton and Santa Fe tracks have been on opposite sides of the river most of the way thus far, but about a mile out of Joliet they come together. We cross under the Outer Belt Line bridge and come on into the neat Joliet Union Station. And there's a Rock Isand suburban train with steam up, waiting to take us back.

The Circus Moves by Rail

BY EUGENE WHITMORE

Illustrations by author and C. P. Fox

Trucks were tried by smaller shows but in long run they proved more expensive than rail transport

In a small city newspaper several years ago the editor wrote, "The circus came to town yesterday and every boy was at the railroad crossing at dawn to see the show unload. Some of the boys were under 40."

Watching the circus unload its long trains of strange animals, great red wagons, its brilliantly carved and gold-leafed cage and tableaux wagons, its "cavalcade of 600 horses," and its "five herds of monster performing pachyderms," has long been a favorite pastime of American boys from six to 60.

But a few years ago it looked as if the railroad circus was about to disappear from the face of the earth. In the late twenties there were from 12 to 15 circuses. During the terrible thirties all but two disappeared leaving only the monster Ringling Bros. & Barnum & Bailey, and Cole Bros. on the road. The others were moving via the highways on motor trucks.

In the 1945 season there were six railroad circuses, four new

Early morning scene at the railroad yards as the horse cars are unloaded. With the increased use of motor trucks fewer horses are used today to haul the wagons from and to the circus grounds.

A loaded wagon comes off the flats and down the runs, with the "poler" shown in the dangerous job of guiding the wagon tongue or pole. Note the rope, which is attached to a snubber back on the car. Military men have studied circus technique of loading and unloading wagons on railway cars.

ones in addition to the two already mentioned. Russell Bros. and Arthur Bros. changed from motor trucks to railroads, and Austin Bros. was organized for railroad operation from the start, while Dailey Bros. went on the rails for a huge success in 1944.

Motorized circuses have generally proved disappointing, both to their owners and to the public. None of the many which were motorized grew to impressive size. Only one or two were consistently profitable.

Trouble was that the trucks wore out too fast, were wrecked, or repair bills were too high. At first glance railroad transportation for circuses seems considerably higher than motorized transportation, but this isn't so.

A commonly used figure for truck transport is 10 cents per mile per truck. Many truck shows are about the size of the typical 10-car railroad circus, and require 40 trucks for transport. At 10 cents a mile, a 60-mile jump would cost $240. A similar jump on the railroad would cost $301, north of the Ohio River. But repairs, accidents, replacement of trucks, state licenses and other fees soon bring the trucking cost above railroad costs.

On longer jumps the railroad rate, being graduated downward as the mileage increases,

The pole wagon is one of the longest in the circus. It may take up an entire flat car by itself. This photo shows the snubber by which wagons are controlled while running down the ramp. The cars have ordinary freight car trucks, but are extra long.

actually becomes cheaper initially. For a move of 120 miles for a 10-car show the tariff is $469, whereas the truck cost at 10 cents a mile would be $480.

There is little opportunity to compare the costs of the larger circuses because motorized circuses never grew very large. The railroad tariff definitely favors the larger shows, because the same crew and motive power can move a 30-car show about as cheaply as a 10-car show. It costs $469 to move a 10-car show 120 miles, but only $771 to move a 30-car show the same distance.

Arthur Bros. Circus officials stated that trucking costs in 1944 totalled $86,000. Now, moving on rails, the estimates for 1945 are $36,000 to cover approximately the same territory.

The highly efficient method of loading and transporting circuses is wholly an American technique begun in 1872 by W. C. Coup, then Barnum's partner. When the Buffalo Bill Wild West Show went to Europe Kaiser Wilhelm was fascinated with its methods and ordered his army officers to study its operation. The United States Army has also studied circus railroad methods from time to time, adopting some of its ideas.

Secret of the circus technique is the efficient loading of wagons, which are hauled, fully loaded, onto strings of flat cars on which they are transported from town to town.

The same load goes into each wagon every night after the performance. Wagons are known by their lading. There is the pole wagon, the seat wagon, the light wagon, for the lighting plant, the canvas wagons, and so on. Almost one entire wagon is loaded with the "big heads," the giant papier-mache heads worn by the clowns in the crazy number which usually comes toward the end of the performance.

One of the most interesting is the costume or wardrobe wagon, equipped like a wardrobe in a home, with hangers and drawers for all wardrobes. Performers go to this wagon for costumes, return the costumes to it immediately after

Once the railroad cars are in the sidings plates are laid across from car to car and the floors form a continuous roadway so that wagons can be pulled along to the end of the train where they are unloaded. Heavy side girders keep them in line.

use. There are other wagons for the "cookhouse," which is the circus dining department, and two or three ticket wagons, which serve as the business offices of the circus.

Circus cars are usually 72 feet long, the extra length being due to railroad tariffs, which are assessed on a car-mile basis. In the circus train are flat cars, stock cars and coaches. Slightly more than half the cars in any circus train are the flats, on which the loaded wagons are pulled each night. It is the rapid unloading of these flats each morning which attracts thousands of local people to the railroad yards when the circus pulls in.

Horses, elephants, camels and other "load stock" are transported in the stock cars. Circus animals are never left alone and the grooms sleep in bunks, swung from the tops of the stock cars. The "cats," lions, tigers, pumas, as well as dogs, birds and monkeys, have their own cage wagons which are pulled up on the flat cars the same as the baggage wagons.

Three to four wagons are loaded on each flat car. Most circus trains consist of about 30 cars, but the great Ringling Bros. & Barnum & Bailey Circus uses as many as 98 cars, traveling in three separate trains.

Circus people make their homes on the coaches, space being allotted according to the rank of the performers. Stars have staterooms, the lesser performers only a berth. One car, known as the staff car, is for the management. Single girls have their own cars, single men, other cars, while families are assigned to the remainder. End doors are locked or boarded up, so you must board your own car, for there is no such thing as walking through a circus train. The owner or manager usually has a private car on which guests are entertained. One circus recently bought the private car formerly owned by Charles M. Schwab, the steel maker, for use by a circus star and his family.

Planning the route of a circus each season calls for amazing astuteness and knowledge of the country, business conditions, weather and

Can't you hear those wide treaded wheels rumbling? At night after the performance the horses, by long habit, follow the oil torches which mark the route back to the railroad siding where the wagons are reloaded. By morning the circus is in another city.

crops, as well as the most intricate knowledge of railroads. The agents who contract the show, months ahead of its appearance in a town, must know every fact about a town's railroad facilities before they bring the show. Where is the crossing nearest the lot where the show may be unloaded? Are there enough sidetracks available for parking the train between dawn and midnight? Are the tracks and bridges on certain branch lines strong enough for the heavily loaded circus cars? How about clearances, curves and other obstacles? Arthur Hopper, Bill Conway, and Al Butler, veterans of the Ringling show, J. D. Newman of Cole Bros., R. M. Harvey of Dailey Bros., are all famed for their photographic memory of every railroad yard in America, and minute knowledge of vacant lots, bridges and crossings in every town.

Ahead of the show from two to three weeks, are the advertising cars, loaded with tons of flamboyant posters, window cards and muslin banners used to advertise the show's coming. From 50 to 90 men are employed on this job alone by the larger shows. The advance cars have berths for the billposters and banner tackers, a private office for the manager and his assistant. At one end is a boiler to cook the several barrels of paste used each day.

Circuses travel from 12,000 to 20,000 miles each season. The last year the Ringling show visited the Pacific coast its trains rolled over 20,030 miles of track. The longest run was from Portland, Ore., to Oakland, Calif., 719 miles. Shortest was the 17-mile hop from Albany to Schenectady, N. Y.

The average move is less than 100 miles; usually there will be no more than six or eight moves of more than 200 miles in a season. This is especially true if a show remains east of the Rocky Mountains where towns are closer together than in the sparsely settled west.

In a typical season a large circus will use about 30 different railroads but in certain years it will use as few as 18 and in other years as many as 43. Circuses prefer, if business warrants, to use one road as long as possible. "Two road" moves consume extra time and cost more. Occasionally it is possible to move on one road for long distances. Coming out of New England in early July a show may move onto New York Central at Albany continuing on through Utica, Syracuse, Rochester, Niagara Falls, Buffalo, Cleveland, Toledo, Detroit, South Bend, Chicago. This would be unusual, unless the show is hurrying west to the Pacific Coast. Ordinarily it might want to play Flint, Jackson, Kalamazoo, Battle Creek, or stop at Pittsburgh, Youngstown, Akron, Dayton, Cincinnati, and Indianapolis.

Out west a big circus may begin on the Southern Pacific, remain on that road through Oakland, Los Angeles, all the way to Houston, or even San Antonio. Here, too, this would be a "fast" route missing San Diego, and perhaps other cities such as Ft. Worth, Dallas, Waco,

Austin, or those famed west Texas towns on the Texas & Pacific, Pecos, Big Springs or Abilene, to break the jump out of El Paso.

Like the railroads, the circuses have their fans, and there are few greater enthusiasms for anything than the circus fan's zest for his favorite show, performer or manager. The Circus Fan's Association has "tents" in many cities with ardent members who vie with one another to see how many different circuses they can attend each season. There are other fans who memorize circus routes year after year, and can guess at almost any given date where any circus will be.

Another circus fan organization is the famed Circus Saints and Sinners, and the circus model builders also have a strong organization of craftsmen who build complete model circuses with every wagon, cage, tent, stake and pole reproduced exactly in minature. One famed circus fan donated to the San Antonio Public Library his collection of circus posters, programs, photographs, route books, plus a vast collection of circus literature including some massive works on costuming. Occupying two large rooms, this exhibit has a ticket wagon from the old Gentry Brothers Show, a complete miniature circus with tents stretched and the coach in which General Tom Thumb, Barnum's famed midget, rode.

The lover of railroads and the lover of circuses have much in common, for without the railroad the modern American circus could never exist, and if the signs on the horizon are right we may have in a few years as many as a dozen good railroad circuses again blossoming forth with the robins in spring to delight the hearts of young and old throughout the land.

Barnum, master politician that he was, wooed the railroads with his excursion posters. The old lithograph below is a typical example. It shows the entire countryside on the way to Barnum's tents, via railroad, of course. P. T. himself is up in a balloon with one of his partners, Hutchinson, telephoning instructions down to Bailey, the third partner. This poster is from the season of 1881. Posters featuring railroads no doubt helped Barnum in working out the close arrangements for travel which were the making of the circus. Public relations is not such a new profession after all.

"Plenty of Strings Attached"

Strings and a ruled board are used in making up a new schedule for single track railroad division

BY C. G. BURKE

WHEN railroaders use the term "stringing a timecard," they're not trying to string you — although there is a string attached to it, a lot of strings, as a matter of fact. The expression is used in a literal sense, contrary to the belief of a lot of people, even those who have been around a railroad a long time but who never have had a hand in compiling a timetable.

From time to time, as schedules are changed, such procedure becomes necessary. Such an instance occurred late in January when the late President Sloan of the M-K-T decided it was time to take advantage of faster running time permitted by the more stable roadbed and heavier rail laid in recent years under his vast rehabilitation program, and clip up to five hours off schedules to and from Texas. This started a chain of events which culminated in the new timecards which went into effect at 12:01 a.m., February 4.

First, heads of the traffic and operating departments agreed on time of departure from and arrival at terminals. Then it was up to the local operating forces of each division and district affected to work out the time over the entire line between the intermediate points.

For this purpose they gathered at two points, Parsons for the north end of the railroad (from the Red River north) and Dallas for the south end. Heavy paper charts, approximately three by five feet, were attached to a large easel. One such chart was provided for each operating division of each district.

The chart was ruled horizontally in five minute intervals, and vertically by mileage, with each station and siding spaced to scale and with the mileage between them indicated. Strings, with rubber bands tied to each end, then were provided; a red one for each passenger train in each direction and a black for each freight. Each bore a small tag indicating the number of the train which it represented.

A pin was inserted through the rubber band at each end and mounted into the board bearing the chart. Another pin anchored the string at the hours of departure from the originating terminal on the particular division under consideration. Still another held the string on the hour and minute of arrival at the last point on the division. Then the work began.

As the string progressed from left to right to indicate the passage of time a pin engaged it at the proper time of arrival and departure from each point along the line, and that was the purpose of the rubber bands—to permit manipulation of the string and still hold it tight against the pins and true to the time of actual operation of the train it represented.

For instance: A train must take siding and wait. Fine! The string crosses the horizontal line indicating that point and a pin is inserted at its junction with the vertical line indicating the proper hour and minute. Then while the train is not moving, "tempus fugit," so, the string makes a sharp turn to the right across the pin and continues along the line indicating the meeting point until it reaches the line indicating the time of its departure, around another pin and on in the proper direction of travel of the train.

Where strings cross? That's a meeting point—unless it's midway between stations or sidings. Then some adjustment must be made in somebody's string to put him "in the hole" while the other goes by.

The board is laid out from midnight to midnight, with the a. m. figures, naturally, on the left. When a train runs past midnight, its string is led off the chart at the line indicating that time and at the nearest station or siding to which it is located at that hour. Then those stringing the card cross the board, anchor a new string representing the same train at the corresponding point down the chart on the left and continue into the morning hours.

Here's an example, taken from the chart showing new time on the Katy's San Antonio Division (see page 36): No. 71 is out of Waco at 10:15 p.m., and arrives at Smith at 11:50 p.m., so the string is led around a pin a little past the intersection of the Smith line with the line indicating 11:50 p.m., and anchored in the margin of the chart. A new string, also tagged No. 71, is fastened to a pin on the left end of the chart and a pin inserted at Little River, representing the first point the line will reach after leaving Smith. The intersecting line indicates 12:01 a.m., the time No. 71 is due to reach there.

The same things happen to No. 6, a passenger train which leaves San Antonio at 10:30 p.m. The string by which it is represented passes off the chart a little north of MKT Junction where the train is running on I-GN trackage.

Meets are well illustrated by the course of No. 1 which leaves Waco at 2:05 p.m. Just a few miles out it passes No. 90, but since this is on double track there is no waiting for either train. The strings are crossed without using pins in this case. At 3:46 p.m. No. 1 meets No. 4 at Weir siding. Since No. 1 is the superior train its string is run straight through but the string for No. 4 makes two sharp bends. The horizontal section between represents the waiting time while No. 4 is in the siding to clear the main for the superior train. At 5:45 p.m. a similar meet is made with a train running in the same direction.

Complicated as the procedure sounds to the uninitiated, the entire procedure of issuing a new timetable is even more complicated than it sounds. The whole operation of stringing a timecard is based on conformance with rules. The book of rules is behind every move and the time and mileage indicated by the strings must be checked and rechecked again and

again to be sure that all rules can be observed if operation is in line with indications of the strings when the charts are completed.

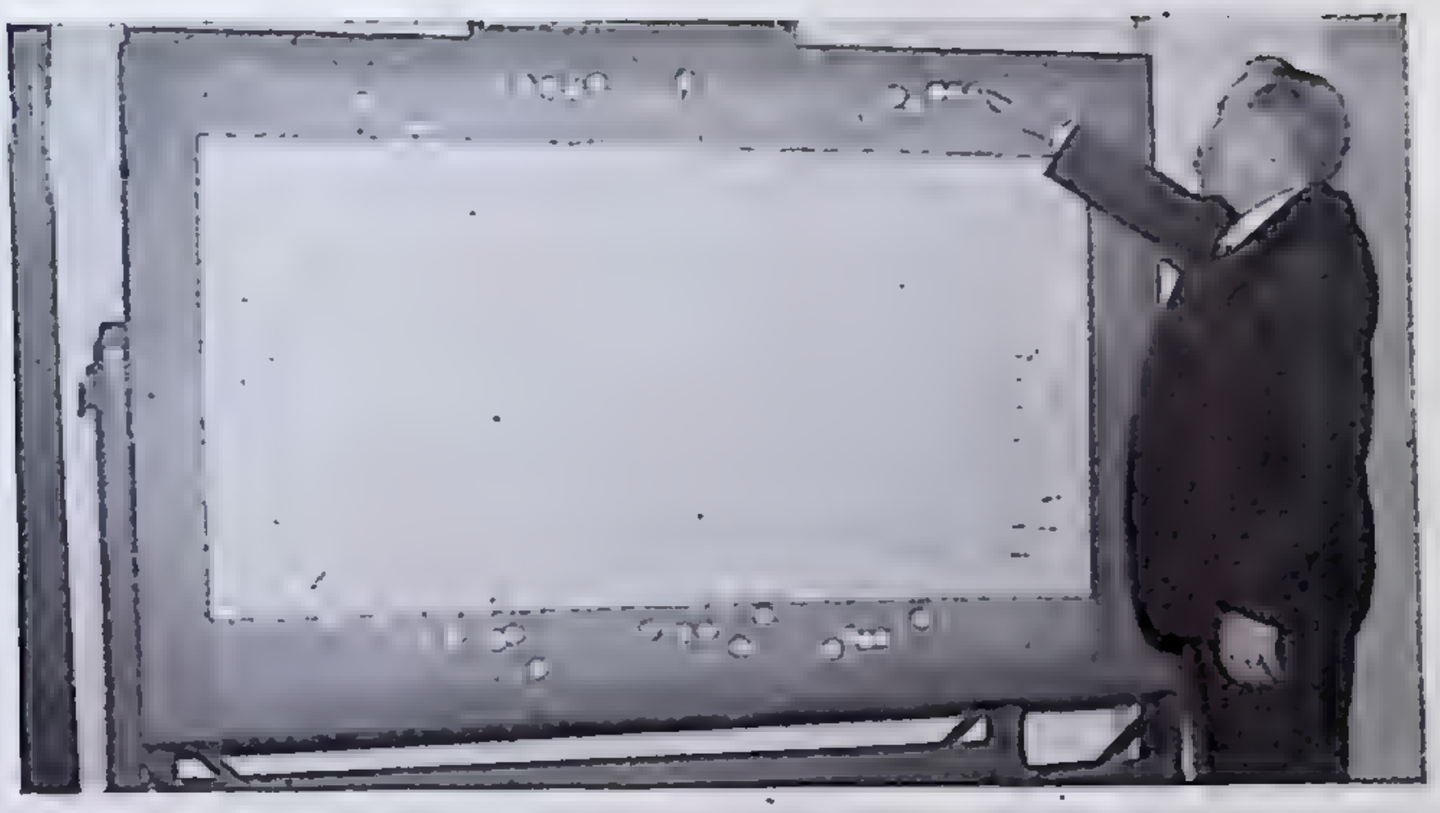
Adjustments are necessary here and there, for such reasons and to allow for various operating problems and conditions. Perhaps a train is scheduled at 48 miles per hour; that does not mean it maintains such speed evenly throughout its entire run. Parts of its schedule may be slower and parts faster. A portion of the route may be reeled off at a mile-a-minute clip to allow the train, for instance, to run through a yard at much reduced speed and still leave the yard on time.

Fractions of miles must enter into the picture. In most cases, stations and sidings are not spaced even miles apart. The figures 4.6, 23.5, or other fractions appear more often in the mileage column than do even numbers. Trains cannot be shown to arrive and depart on fractions of a minute, so adjustment is made to give trains more time per mile between certain points than between others to compensate for the difference.

A heavy freight cannot pull up a hill as fast as it can operate downhill or on level track, so more compensation is necessary. On employees' timetables—or, in railroad vernacular, "working timecards"—passing time is usually shown for every train at every station and every passing track. Under operating rules and for safety reasons trains cannot pass any of these points ahead of schedule, although they do not stop.

Then, before the "working timecard" goes to the printer, the timetable file is hauled out and its accumulation of bulletins and other material, which has been gathering since the last card was issued, is brought forth and studied. Tonnage ratings, the speed table, special instructions, lists of officers —all require careful consideration before the final O. K. is given. Even then, those responsible must wait several days before drawing a deep breath of relief, for fear the phone will ring or someone will open the office door waving the new timetable and shout, "Of all the blankety-blank boneheads! Ain't youse guys learned yet how to string a timecard without pulling a boner like this?"

All of which would lead one to believe that the job is far from the



child's play it might appear upon first viewing the pin-bedecked and string criss-crossed chart.

WHILE all of this has had to do only with the employees' timetable, used by operating department people who have to do with running trains, a change of schedule means as much or more work for the passenger traffic department and for the advertising department in issuing a new timetable folder for distribution to the public and to ticket sellers both on the line and on other roads.

As soon as the "working timecards" are completed by the various operating districts, copies are forwarded to headquarters. In the case of the Katy they converge on the desk of the advertising agent. He must combine them into one continuous list from one end of the railroad to the other.

Only stations where stops are made are shown, of course, in contrast to listing of all sidings in the employees' timetable. Necessity for speed requires that the printers work day and night in order to deliver the finished folder as nearly as possible to the hour when the changes become effective. Proofs must be checked and rechecked to guard against error.

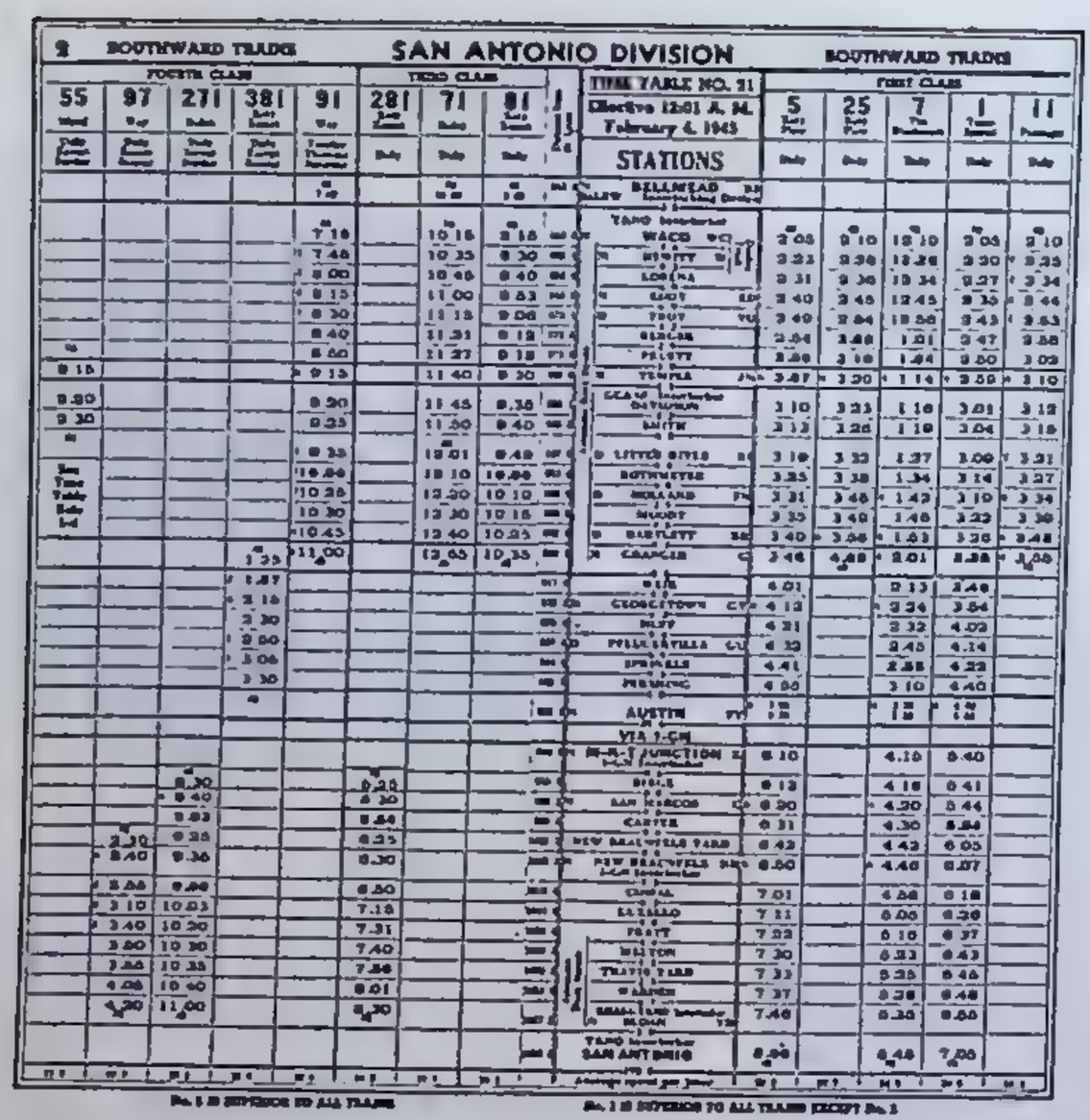
The Katy's new folder is in a new simplified form and one that no doubt will come into widespread use on many other railroads. Schedules of each train are shown from departure from the originating terminal to arrival at the end of the run.

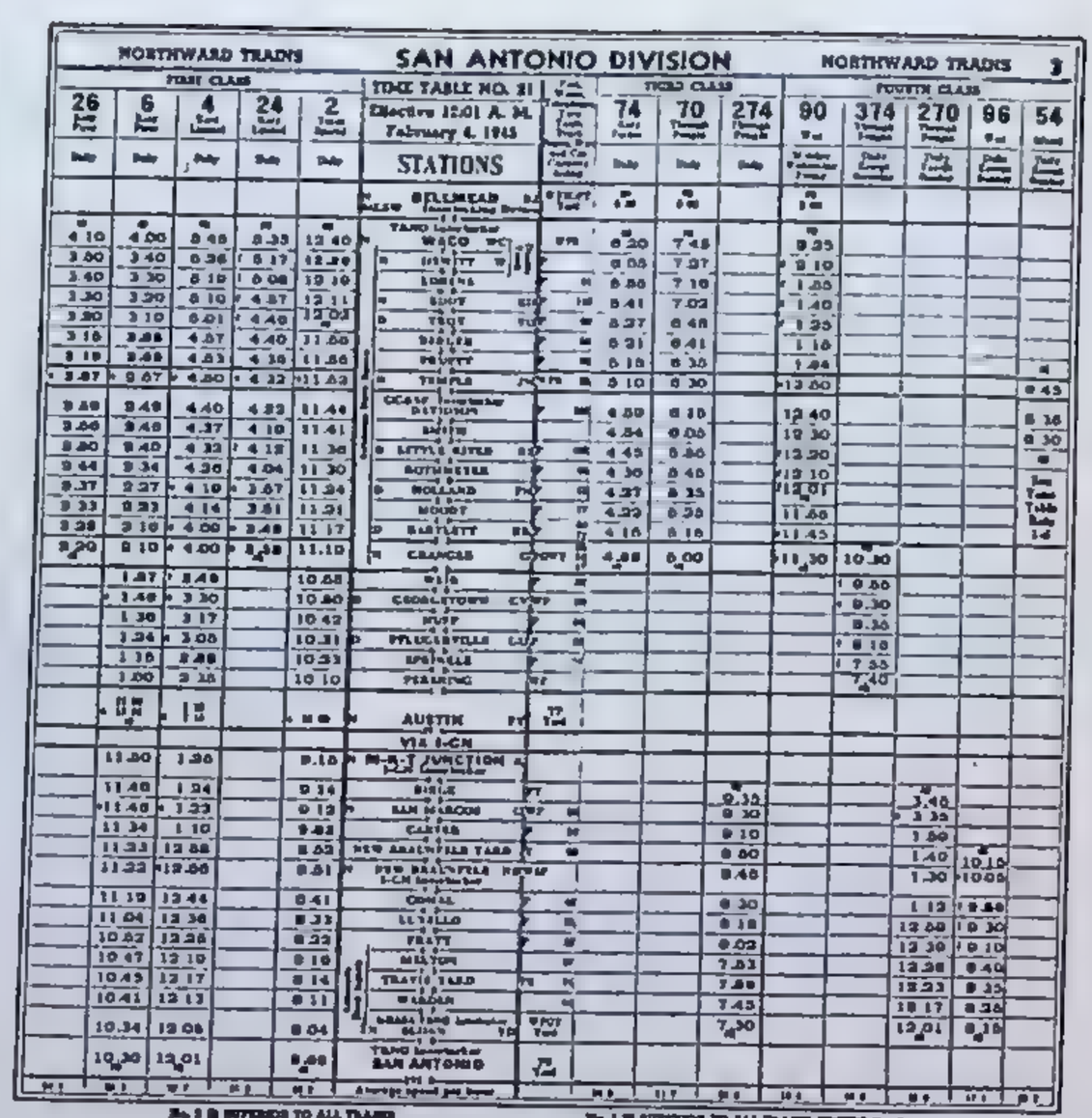
The railroad is unusual in having two terminals on the north end, Kansas City and St. Louis, and two on the south end, San Antonio and Houston, with mainline service crossing in an X in its center, Dallas and Fort Worth. Time formerly was shown, for instance, from St. Louis to San Antonio, with the time from Kansas City and the time to Houston interjected. The same also applied St. Louis to Houston, and in the northward direction between those points.

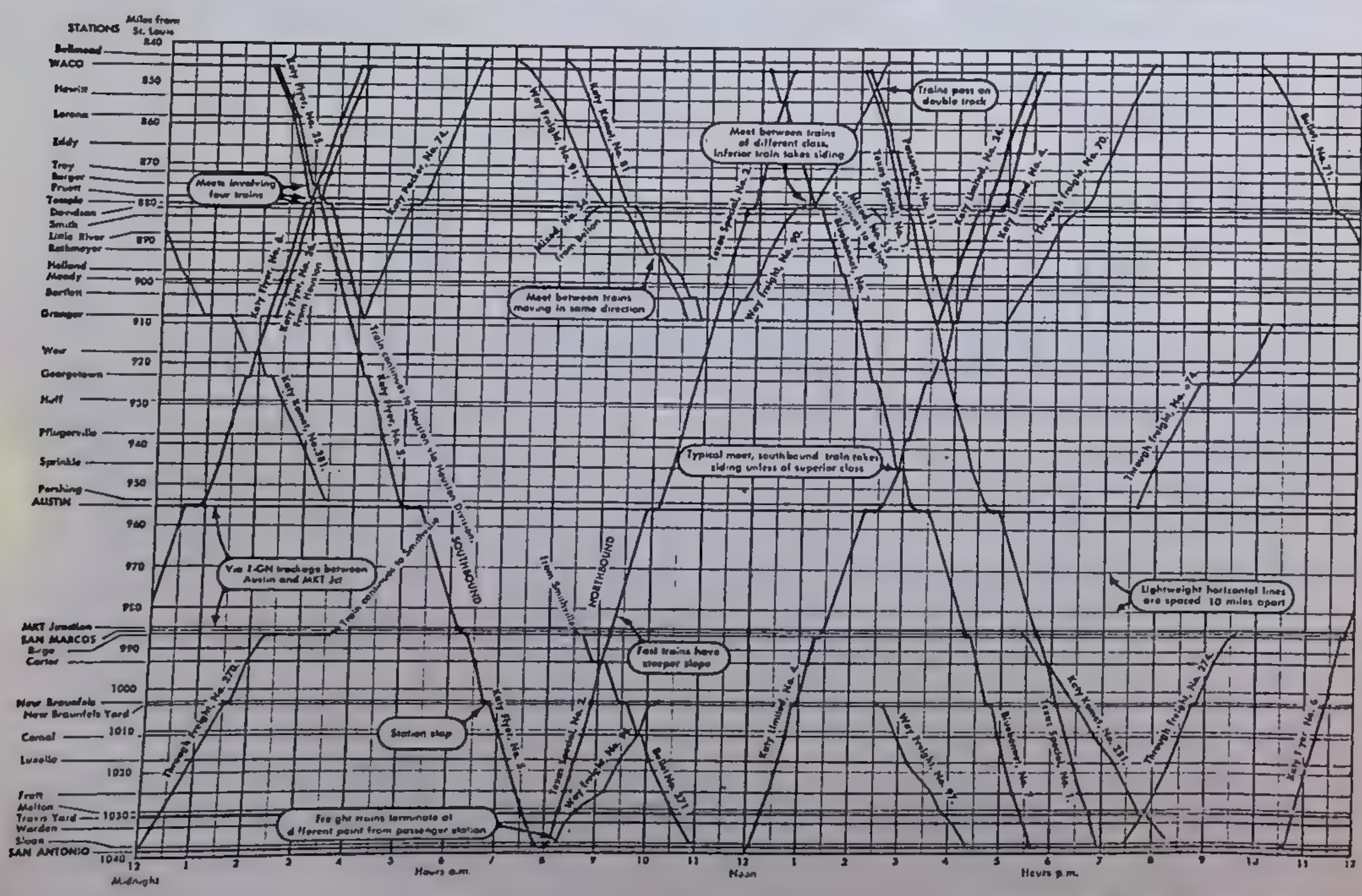
Under the new system, entirely separate schedules are shown for the runs between St. Louis and San Antonio, Kansas City and San Antonio, St. Louis and Houston, and Kansas City and Houston, in both directions. Thus a traveler between any of those terminals finds the mystery gone from the timetable folder on the Katy and is not confused with connecting service in which he isn't interested.

As in stringing an employees' timetable this thing of producing the folder for the public is no small job nor an easy one. The information contained is exacting. Footnotes, times of connections and other information must be changed to conform with changing conditions each time the folder is printed. Distribution entails work of considerable proportion to supply every station, every ticket office and most departments and offices on the railroad. Other railroads also must receive copies, and distributing organizations which place the folders in hotels and other public places must be supplied.

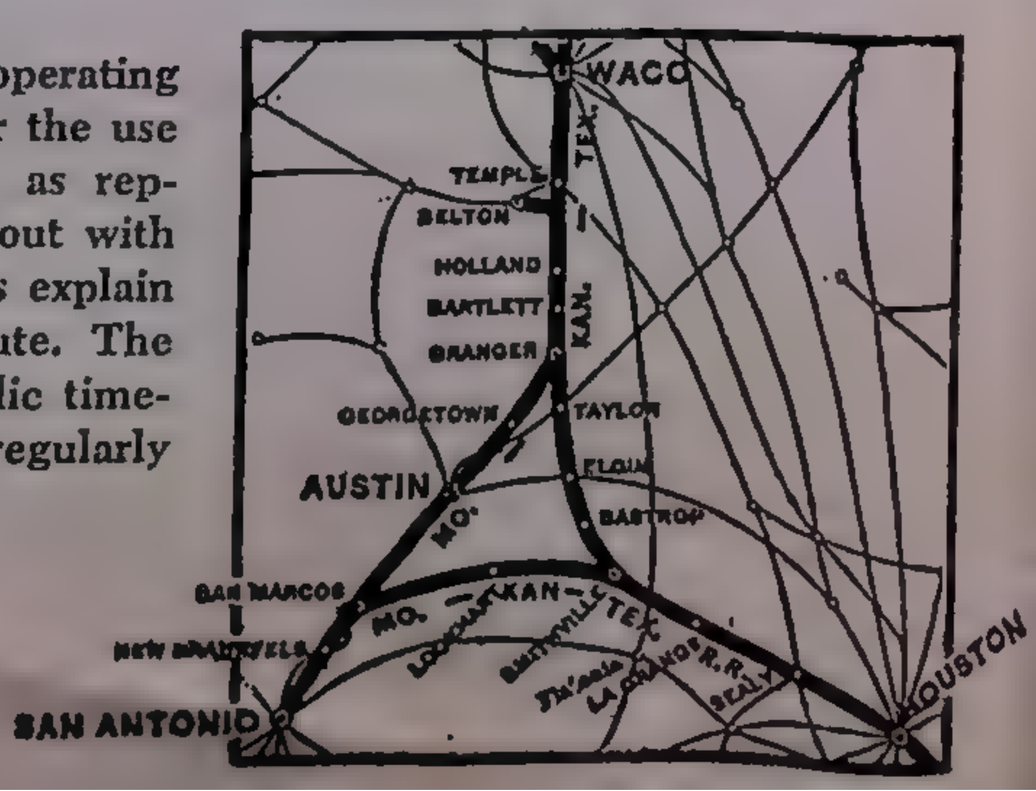
Then there are hundreds of newspaper advertisements to be prepared and rushed to the newspapers at all points affected. Each must show the times of the various trains, necessitating changes in many of the advertisements. News articles telling of the changes also must be prepared and mailed to the newspapers well ahead of the date of the schedule revision.







Here are three versions of the same timetable: As printed for operating department employees, top; as printed for the Official Guide for the use of ticket sellers, passenger men and the general public; and as represented graphically in the same form as it was originally laid out with strings. The map shows the Katy lines south of Waco and helps explain the trains which use only part of the Waco-San Antonio route. The operating timetable gives much more information than the public timetable and is, of course, chiefly distinguished by showing regularly scheduled freight trains as well as passenger trains.



MISSOURI-KANSAS-TEXAS LINES

Table 4—WACO AND SAN ANTONIO-HOUSTON.

NOTE ⊡ for permissive stops for Limited Trains, see below.

No. 25	No. 5	No. 11	No. 1	No. 7	Miles.	February 4, 1945.	No. 4	No. 24	No. 6	No. 26	No. 2
■*1050 P M		*600 P M		*215 P M	0	lve.....St. Louis.....arr.			747 A M		830 A M
*820 A M				*930 P M		lve.... Kansas City ....arr.	830 A M		1030 P M		
■*1050 P M		*1120 A M		*910 A M	767.2	lve.....Dallas.....arr.	845 P M		✱705 A M		315 P M
■*1050 P M		*1120 A M			757.4	lve.....Fort Worth.....arr.	845 P M		✱715 A M		
						LEAVE] [ARRIVE					
*210 A M	*205 A M	*210 P M	*205 P M	*1210 P M	845.5	+.....Waco.....ô	545 P M	535 P M	400 A M	410 A M	1240 P M
— —	— —	f225 "	— —	a1226 "	853.1	.....Hewitt.....ô	y528 "	f517 "	— —	— —	— —
— —	— —	f234 "	— —	— —	858.4	.....Lorena.....	y519 "	f508 "	— —	— —	— —
— —	— —	x —	— —	a —	863.1	.....Bruceville.....ô	f —	— —	— —	— —	— —
— —	— —	244 "	— —	a1245 "	865.2	.....Eddy.....ô	y510 "	f457 "	— —	— —	— —
— —	— —	f253 "	— —	a1256 "	872.1	.....Troy.....ô	y501 "	f446 "	— —	— —	— —
320 "	307 "	310 "	259 "	114 "	880.0	+.....Temple.....ô	450 "	432 "	257 "	307 "	11 52 A M
— —	— —	f321 "	— —	a127 "	887.6	.....Little River.....	y432 "	f412 "	— —	— —	— —
— —	— —	x —	— —	— —	892.0	.....Rothmeyer.....	y426 "	— —	— —	— —	— —
— —	— —	334 "	— —	142 "	896.8	+.....Holland.....ô	419 "	357 "	— —	— —	— —
356 "	— —	345 "	— —	153 "	902.8	+.....Bartlett.....ô	409 "	345 "	— —	— —	— —
— —	— —	355 "	— —	201 "	908.1	arr.....Granger ô.....lve.	400 "	335 "	— —	— —	— —
	— —		— —	201 "	908.1	lve.....+Granger.....arr.	400 "		— —		— —
	— —		— —	b213 "	917.4	.....Weir.....ô	f346 "		— —		— —
	412 "		) —	224 "	923.3	+.....Georgetown.....ô	330 "		246 "		‡1050 "
	— —		— —	b245 "	937.9	.....Pflugerville.....ô	305 "		— —		— —
	— —		— —	— —	940.7	.....Dessau.....	— —		— —		— —
	— —		— —	— —	944.4	.....Sprinkle.....ô	— —		— —		— —
	505 "		450 "	320 "	955.5	arr.....+Austin ô.....lve.	225 "		1250 "		1000 "
	520 "		455 "	330 "	955.5	lve.....Austin.....arr.	215 "		1235 A M		1000 "
	620 "		) ○	420 "	986.5	+.....San Marcos.....ô	122 "		1146 P M		x912 "
	650 "		) —	446 "	1003.3	+.... New Braunfels ....ô	1256 "		o —		‡851 "
	800 A M		705 P M	545 P M	1038.6	+.....San Antonio.....ô	*1201 P M		‖*1030 P M		*800 A M
						ARRIVE] See Note ▲ [LEAVE					
— —		355 "			908.1	lve.....+Granger ô.....arr.		335 "	— —		
421 "		416 "			919.0	+.....Taylor.....ô		321 "	159 "		
— —		433 "			926.8	..... Coupland .....ô		307 "	— —		
452 "		446 "			934.8	+..... Elgin.....ô		255 "	f125 "		
— —		f500 "			943.7	.....Sayers		f239 "	— —		
521 "		515 "			947.3	+.....Dunstan.....		232 "	102 "		
540 "		530 "			954.0	+..... Bastrop .....ô		214 "	1243 "		
— —		x —			962.3	..... Upton		f156 "	— —		
605 "		555 "			969.4	arr... +Smithville ô ...lve.		145 "	1215 "		
615 "		605 "			969.4	lve..... Smithville .....arr.		135 "	1205 A M		
— —		x —			974.0	..... Kirtley.....		f126 "	— —		
— —		621 "			978.3	+..... West Point .....ô		118 "	— —		
— —		630 "			982.4	..... Plum .....ô		110 "	— —		
644 "		642 "			988.3	+.....La Grange.....ô		101 "	1135 P M		
— —		f654 "			994.4	.....Halsted.....		f1250 "	— —		
— —		707 "			1001.6	.....Fayetteville.....ô		1238 "	— —		
— —		x —			1006.6	.....Nichols.....		— —	— —		
— —		725 "			1013.7	.....New Ulm.....ô		1222 "	— —		
— —		740 "			1024.1	..... Cat Spring .....ô		1206 P M	— —		
f745 "		755 "			1035.5	+..... Sealy .....ô		1150 A M	f1031 "		
— —		816 "			1047.9	+..... Brookshire .....ô		1129 "	— —		
— —		828 "			1055.8	..... Katy .....ô		1118 "	— —		
— —		f844 "			1066.6	..... Addicks .....ô		f1102 "	— —		
f850 "		f905 "			1081.3	.....Houston Heights.....		f1040 "	f925 "		
900 A M		915 P M			1084.1	.....+Houston ô.....		*1030 A M	*915 P M		
						ARRIVE] [LEAVE					

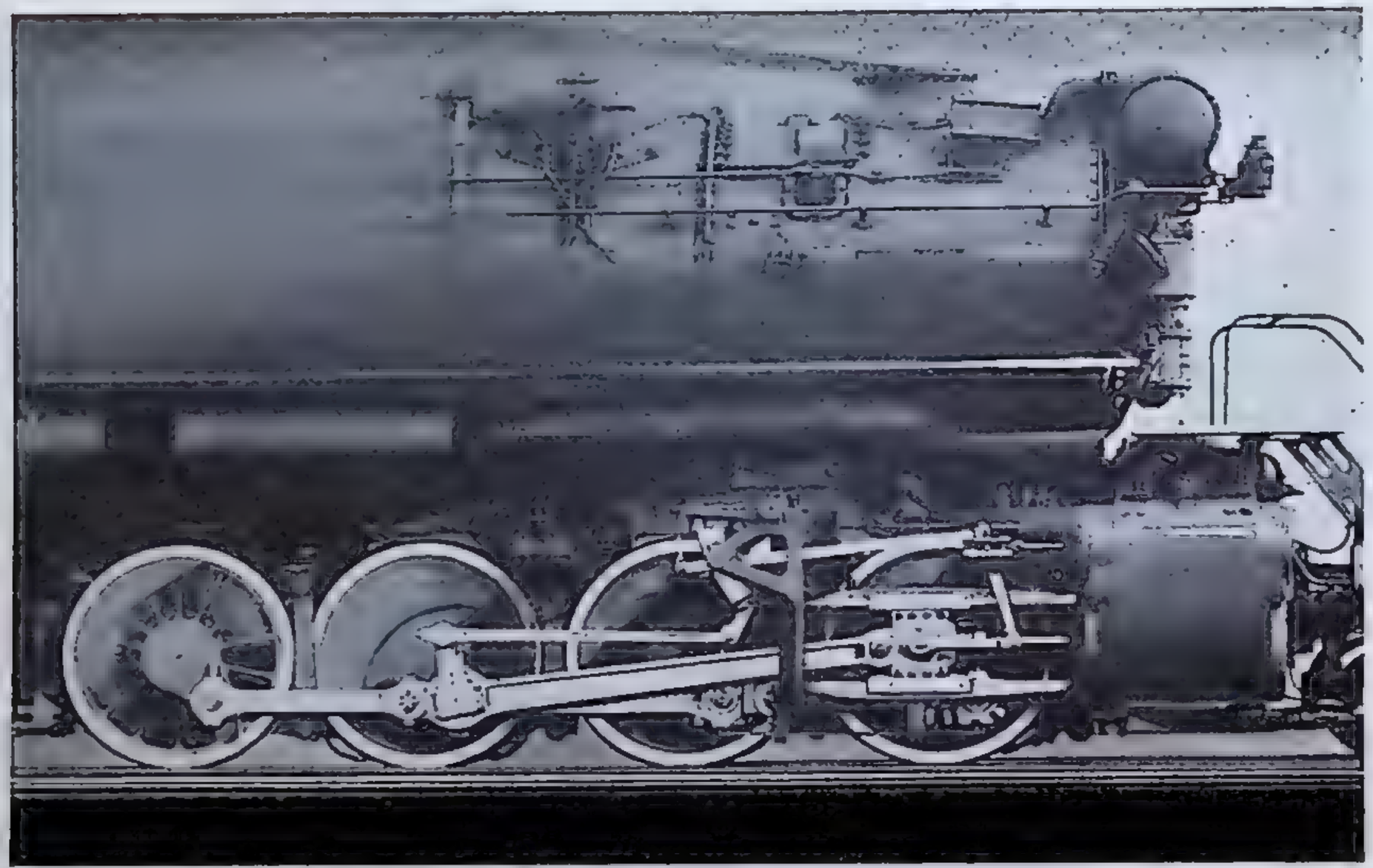
Katy Flyer. — Texas Special. — The Bluebonnet. — Katy Limited. — Katy Flyer. — Texas Special.

EXPLANATION OF SIGNS.

* Daily.
† Daily, except Sunday.
§ Sunday only.
a Stops to receive revenue passengers for points Wier to San Antonio, inclusive.
b Stops for revenue passengers.
f Stops on signal.
o Stops to receive revenue passengers for Waco and beyond that are regular stops for Nos. 6 and 26.
x Stops to receive revenue passengers for St Louis or Kansas City.
y Stops to discharge revenue passengers from any station San Antonio to Weir, inclusive.
z Stops to discharge revenue passengers from north of Waco.
‡ Stops to receive revenue passengers for St. Louis.
○ Stops to discharge ten or more passengers for Reedville Air Base.
✱ Pullman cars may be occupied until 8 00 a.m.
▲ Station for Fort Sam Houston, Brooks Field, Dodd Field, San Antonio Air Service Command, San Antonio Aviation Cadet Centre, San Antonio Arsenal, Camp Bullis, Camp Stanley, Randolph Field, Normoyle Field and Camp Cushing.
) Stops to discharge revenue passengers from St. Louis.
■ Sleeper ready at 9 30 p.m.
‖ Sleeper ready at 9 00 p.m.
| Meals.
+ Coupon stations.
ô Telegraph stations.
STANDARD—*Central time.*
Mexico Time one hour earlier than U.S. Central Time.

NOTE ⊡—Permissive Stops for "LIMITED" Trains.—Trains 7 and 23, THE KATY LIMITED and THE BLUEBONNET will stop at any station in Texas, to discharge revenue passengers (including drovers' tickets) from Kansas City and beyond. Trains 5 and 25, THE KATY FLYER, will stop at any station in Texas, to discharge revenue passengers from St. Louis or Kansas City; also to discharge revenue passengers from all stations St. Louis to South Mound, Kan., inclusive. Trains 6 and 26, THE KATY FLYER, northbound will stop at any station in Texas or Oklahoma, to receive revenue passengers for Kansas City or St. Louis, also for all stations north of South Mound, Kan.

For number of table upon which each station is located, see General Index of Stations in back part of Guide.



DESTINATION—Tokyo!

We are proud to have a part in helping solve America's toughest logistics problem ...we'll continue to do everything in our power to effectively serve Uncle Sam and you.

F. C. HOGUE
General Traffic Manager
DENVER & RIO GRANDE WESTERN RAILROAD
Rio Grande Building • Denver, Colorado

Rio Grande

★ ★ ★ ★ ★ ★

"The transportation job in the first phase of the war has often been called a 'miracle.' The job ahead of us is even bigger.

"It is important that the public understand the situation and at once lend full cooperation in order that the burden may be minimized."

—PRESIDENT TRUMAN

★ ★ ★ ★ ★ ★

Some are headed home for good—but millions more will stay only briefly before they go on to finish the job in the Pacific.

These fighters are now on the move—and this is the No. 1 reason why trains are so crowded these days.

If it comes to a choice between your taking a trip—and a returned soldier's getting to see his home folks before moving on to an embarkation point—we know you will understand who deserves the right of way.

The railroads must continue to devote all their energies toward hastening final victory and the day when the boys can come back home for good.

We know that's the way you want it—and we count on your cooperation.

AMERICAN RAILROADS

ALL UNITED FOR VICTORY

Coolies vs. Railroads

BY GEORGE S. BENSON*

The coolie at 10 cents a day cannot compete with railroad efficiency

YEARS before I ever saw an ocean, pictures of picturesque Oriental places and people interested me. Distinctly I remember one decorative drawing of a Chinese boy. He wore wooden shoes and a breadtray hat. His queue seemed to wave sportily behind him as he walked with a wooden yoke on his shoulders. He carried two buckets that hung from cords, one from each end of the yoke.

Later I saw such men in real life, many of them. I was old enough then to wonder what was in the buckets and why people had to lug them. The first such "common carrier" I patronized had kerosene in his buckets, five gallons at each end of the yoke. His daily job was to walk 10 miles and carry 10 gallons, for which labor the local oil dealer paid him 10 cents a day.

Oil consumers had to pay one cent a gallon for 10 miles of overland transportation, which is exhorbitant. The dealer had to content himself with a speed of one mile per hour in transit, which is ridiculous. The poor coolie worked 10 hours a day for a penny an hour, three dollars a month, which is preposterous. Such was the Orient when I was there and it hadn't changed much in a thousand years.

In America, where there are railroads and the economy of volume applies in transportation as well as in other things, one cent pays for moving a gallon of kerosene overland 100 miles, not 10. Speeds in transit are rarely below 200 miles a day. Trainmen who do the work get $175 a month, not three dollars. The difference is that railroad investment exceeds $20,000 per employee.

Total railway investment in the United States exceeds 26.5 billion dollars. In a recent address in Florida, Thurman W. Arnold of the Federal Court of Appeals charged the railroads with trying to throttle competition to make their investments safe. I do not know the specific accusation, but I know two things: (1) Real competition can't be throttled and (2) investments ought to be protected.

Whose investment is it? Railroads don't belong to the officers of the company. They don't belong to their mere million of stock and bond holders. There are dozens of millions of people who own insurance policies and have bank accounts who are the real investors in railroads. A government with the interest of its citizens in mind would help protect their accumulated labor and their investments.

Railroads, more than any one thing, made America what it is today. They are partially responsible for the difference between the United States and China. America is superior because its interior is developed. Railroads penetrated the wilderness and brought its wealth to market. Then venturesome pioneers hurried inland from both shores to seek personal gain and the interior developed by economic law.

Railroads, like other industries, are sending young men to war. Railroads have their manpower shortage and it's acute. But with less equipment than they had in World War I, railroads are doing nearly twice as much actual work as they did under Federal bunglement. Our only route to still higher American efficiency after the war is through protecting and encouraging liberal investment of private capital in the tools of production.

*Dr. Benson is president of Harding College at Searcy, Ark. In this article he deals with the contrast in the transportation conditions in the Orient, where he lived for many years, and in this country. It is a real contribution to an understanding of the place of rail transportation in this country and the function of investment in making this transportation possible.

The Wolverine

Quiz solution→

See quiz on page 26

A. C. Kalmbach.

eaving Chicago

The Michigan Central's Wolverine at Kennsington, junction on the south side of Chicago where both Michigan Central and South Shore Line leave the Illinois Central main line. The Wolverine has come down from Central Station on the through passenger tracks in the middle of the right of way. On far side are the electrified suburban tracks and on near side are the freight tracks.

These places were wrong in the quiz on page 26.

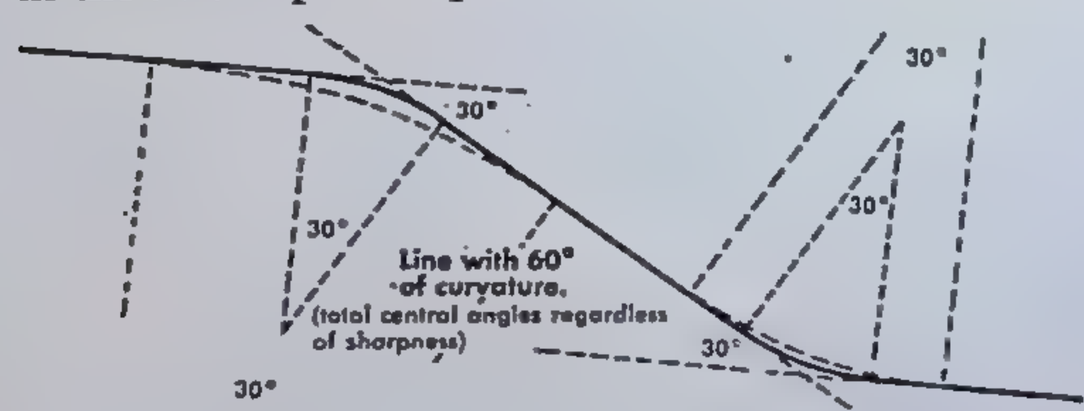
If you missed one of the errors in each list you're still not doing badly.

C&NW	Albert Lea, Minn.	Fargo, N.D.	Iowa City, Ia.
AT&SF	Keokuk, Ia.	Peoria, Ill.	St. Louis, Mo.
Erie	Fort Wayne, Ind.	Pittsburgh, Pa.	Sydney, N.Y.
B&O	Peoria, Ill.	Fort Wayne, Ind.	Springfield, O.
Southern	Montgomery, Ala.	Nashville, Tenn.	Wilmington, N.C.
CN	Lethbridge, Alta.	Sault Ste. Marie, Ont.	Spokane, Wash.
WP	Klamath Falls, Ore.	Lovelock, Nev.	Ogden, Utah.
Wabash	Cleveland, O.	Indianapolis, Ind.	Peoria, Ill.

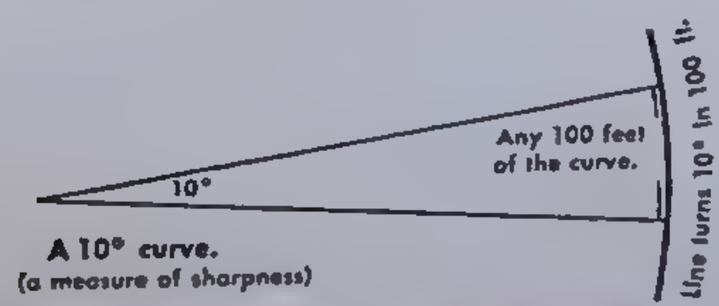
Degrees of Curvature

When civil engineers refer to the "degrees of curvature" in a line of railroad they refer not to the sharpness of the curves, as might be inferred from the use of degree of curvature to indicate the sharpness of a particular curve, but to the total curvature in the line. Any railroad line consists fundamentally of sections of straight track, or tangents, connected by curves.

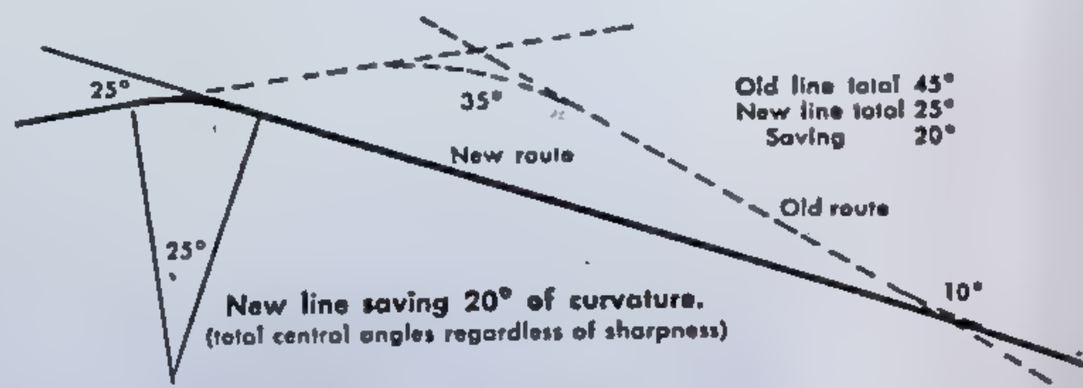
At each curve the line deviates in direction by a number of degrees, and this deviation is equivalent to the number of degrees in the curve needed to connect the two tangents. The drawing shows how a line of railroad made up of three tangents is connected by two curves of central angle equal to the deviation in direction of the tangents. These curves can be sharp or gradual, but as the alternate curves show, no matter how sharp or gradual they are the central angle will be the same. Thus the total degrees of curvature in the line depends upon the location of the tangents.



But the sharpness of each individual curve is also measured in degrees, and this "degree of curvature" may vary without affecting the "degrees of curvature." The degree of curvature is the amount the curve turns in 100 feet, or the same thing, the amount of central angle measured off by a 100 foot chord along the track. The sharper the degree of curvature the less feet of track it takes to go around a particular curve, but the central angle, or total degrees of curvature remains the same.



A railroad is interested not only in making its curves less sharp, but also in reducing the total degrees of curvature in a line, because the curvature means more power to pull trains and more wear and maintenance on track. The total degrees of curvature can be reduced only by realigning the tangents. The lower drawing shows how the three tangents might be replaced by two, thus eliminating one curve entirely and cutting down the total degrees of curvature. The one remaining curve might be as sharp as either of the two original curves, but the reduction in total curvature would mean less track expense and better operation. Extend this process over an entire division, picking up a few degrees here and there, and the total is very significant.



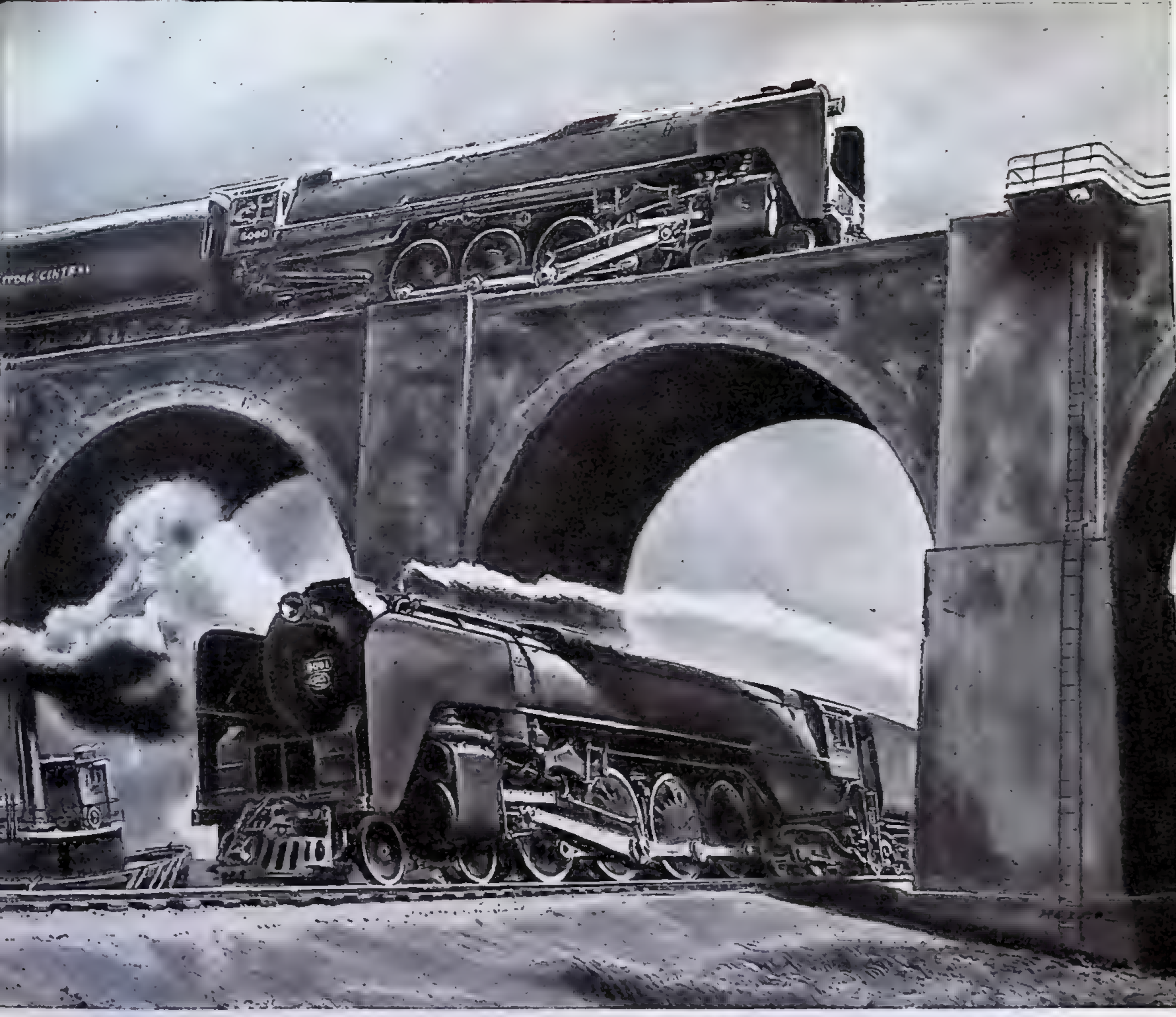
Crossing signs in Palestine are three language affairs, in English, Arabic and Hebrew. So are all timetables, tickets and signs.

On Speaking Terms

One of the most unusual operating rules coming to our attention is the one on several small southern lines which provides that when opposing trains meet, the crews of the two trains must call out to each other the numbers of their respective trains. Each crew must hear distinctly the numbers called, and the engineer of the train holding the main line must reduce his speed to six miles per hour to make this practical.

Unusual Bridge

Unique earthquake proof bridge across the Pajaro River on the Southern Pacific's Coast Route south of San Francisco is shown in photo with the Daylight crossing. The bridge is located at a point where the river flows almost exactly along the line of the San Andreas earthquake fault and is mounted on rockers with one end anchored and the other end riding free in a recessed abutment. It is equipped with electrical recording devices to measure pier movements and to stop trains if movement of a pier exceeds ¾ inch. The bridge was designed by SP engineers.



Which one is the freight locomotive?

BOTH ARE! And you may be surprised to learn that both are passenger locomotives, too. They're actually *interchangeable*.

This is important to the railroads because, until recently, freight and passenger locomotives were built differently—one primarily for *hauling power*, the other mainly for *speed*.

Today, however, out of American Locomotive's hundred years' experience have come locomotives that are truly multipurpose. Like the "Niagara" locomotives shown above, latest result of close co-operation between The New York Central and American Locomotive designers, these locomotives can haul fast freights one day and crack passenger trains the next. Moreover, they may be steam or diesel-electric or any modification of either type. It doesn't matter whether they are powered by coal or oil—the important thing is economy of performance.

This development helps reduce the number of locomotives a railroad must buy and maintain to do its job. And that's important to you. For it is out of *savings* that a railroad gets the money to make improvements in service.

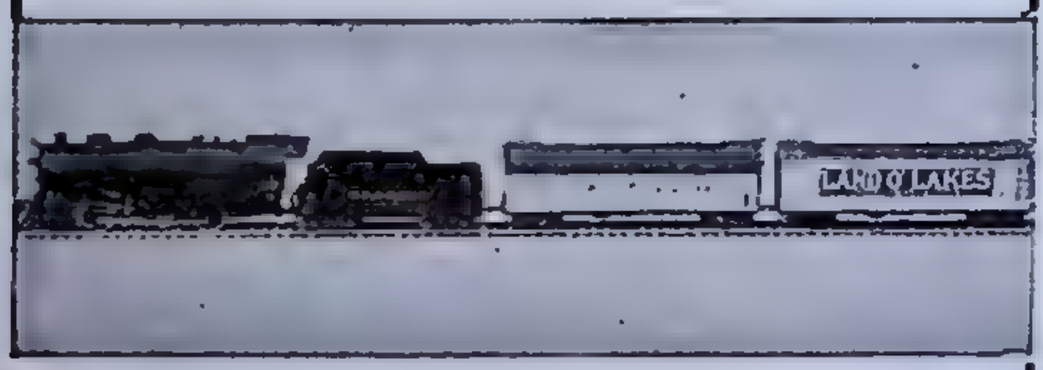
This is just one of many developments that will contribute to finer post-war railroad service. And it is significant that it comes from the Company that built the world's largest steam locomotive, gave America its first diesel-electric locomotive, and has supplied an important share of the locomotives now being used for war purposes by the United Nations.

American Locomotive

Alco

THE MARK OF MODERN LOCOMOTI

OWN YOUR OWN RAILROAD



Building scale models of cars, locomotives and even the right of way, itself, is a hobby leading to endless enjoyment.

Write for our booklet on miniature railroading along with our pre-war catalogue—It's interesting reading—Price 25c.

MANTUA METAL PRODUCTS CO.
Woodbury Heights - New Jersey

Rush Hour Near Toledo

Nine first class trains are scheduled north out of Alexis (north of Toledo) on the Pere Marquette. Uniquely, seven of the nine trains leave within one hour. At 6 a.m., a B&O's night train from Cincinnati follows parade, to be followed five minutes later by the Pennsy's overnight train from Pittsburgh. Just five minutes again and the B&O's night train from Cincinnati follows suit. The towerman gets a rest for 15 minutes before the C&O *Sportsman* runs through. Fourteen minutes later the New York section of the PRR's *Red Arrow* shows up. The only Diesel of the day slides off the NYC tracks at 6:55 hauling the B&O's *Ambassador,* and a scant four minutes later the Washington section of the *Red Arrow* brings up the end of the line. Nearly 12 hours later two trains within 33 minutes of each other wind up the passenger parade on this portion of the PM's Toledo-Ludington Division. Pennsy trains run as far as Carelton, 25 miles, while most of the B&O trains move to the Wabash at Romulus, 11¼ miles further.

LIMAS AROUND THE WORLD

Lumbering has long been one of the principal industries of the Philippines. Here a Lima-built Shay locomotive, belonging to the Insular Lumber Company, hauls a log train from forest to sawmill, through a Nipa shack camp on Negros Island.

LIMA LOCOMOTIVE WORKS, INCORPORATED
LIMA OHIO

Don't Miss This

There may be $100.00 in it for you!

ED HUNGERFORD, well known railroad writer, and Ernest Thross, a traveling representative for a large food manufacturer, were enjoying a steak and onion sauce in a Harvey House some years ago when the conversation drifted to timetables. In the course of the discussion the boys made a wager to see which could plan the quickest railroad trip covering all parts of the country. Here were the conditions they set up:

1. A traveling representative is to make an official visit to the governor at each state capitol and to the President in Washington. He must spend at least two hours between the hours of 8:00 a.m. and 6 p.m. in each capitol city in order to transact business and get between the capitol building and the railroad station or hotel. Also the visits may not be made on Saturdays, Sundays or legal holidays such as January 1, February 12, February 22, May 30, July 4, November 22, December 25.

2. He is to start at any downtown Chicago railroad station, travel by regularly scheduled railroad trains only, except when making connections between stations, and return to a downtown Chicago station in the shortest length of time possible.

3. When making connections between trains in different stations he must allow 15 minutes for each mile or fraction for transfer time.*

When Ed and Ernest met to compare their itineraries a few weeks later, Ed's plan won the wager by some 14 days. Being accustomed to traveling on a pass, Ed made use of his holidays to get his representative to a distant part of the country while Ernest saved miles and lost hours.

BECAUSE the editors of **Trains** thought you would enjoy planning a similar routing they offer a first prize of $100 and other generous prizes for the best itineraries for a similar trip. Use the same conditions listed above plus these and see if you can't outdo the rest of the readers of **Trains**:

4. The trip is to start on or after 12:01 a.m. August 1, 1945, and must comply with schedules effective on that date.*

5. Put your entry into the form illustrated below so all information is shown clearly for the judges.

6. Mail your entry to Contest Editor, Trains, 1027 N. 7th St., Milwaukee 3, Wis., before midnight Sept. 15, 1945.

Employees of Kalmbach Publishing Co. are, of course, not eligible for prizes.

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* The judges will use the August, 1945, issue of the Official Guide of the Railways to check schedules and distances between stations. Copies may be consulted in most libraries and railroad stations. If you cannot find an August issue, earlier 1945 issues will still be helpful since few schedules are likely to be radically changed.

Give your name and address complete.

Show date and time your trip ends at Chicago.

Indicate schedules used to check your trip.

Show your itinerary in laps from capitol to capitol with days of week and dates indicated.

List leaving time, railroad, train number, point of departure, arriving time at destination, and destination for each train used.

Show two-hour stays in capitols.

Show transfer between stations; allow 15 minutes per mile or fraction.

John J. Smith
4705 North Elm St.
Cortlander 7, Ohio

My trip finishes in Chicago, February 21, 1946 at 8:50 am.

I checked my trip with some August timetables and with a June copy of the Official Guide.

Here is my itinerary:

CHICAGO TO SPRINGFIELD- Wed., Aug. 1

Lv. 8:30 am. Alton No. 11. Chicago Union Sta.
Ar. 2:10 pm. Alton No. 11. Springfield

4:10 pm. Springfield visit ended

SPRINGFIELD TO JEFFERSON CITY- Wed., Aug.1 & Thur.,Aug. 2

Lv. 6:16 pm. Illinois Terminal No.97. Ill.Term. Sta.
Ar. 9:10 pm. Illinois Terminal No.97. St.Louis, IT Sta.

Ar. 9:25 pm. St. Louis Union Sta. ¼ mi. from IT Sta.

Lv.11:50 pm. Missouri Pacific No.9. St.L. Union Sta.
Ar. 2:43 am. Missouri Pacific No.9. Jefferson City

10:00 am. Jefferson City visit ended

JEFFERSON CITY TO [illegible] CITY- Thur., Aug. 2 & Fri.Aug. 3

Notice how time is gained by taking Illinois Terminal out of Springfield instead of waiting for a later Alton train.

This typical itinerary is not necessarily a good one since some time is wasted waiting for 8 a. m. visiting hours at Jefferson City.

By listing days of week, transfer time, and visiting at capitols you will avoid errors.

The Prizes

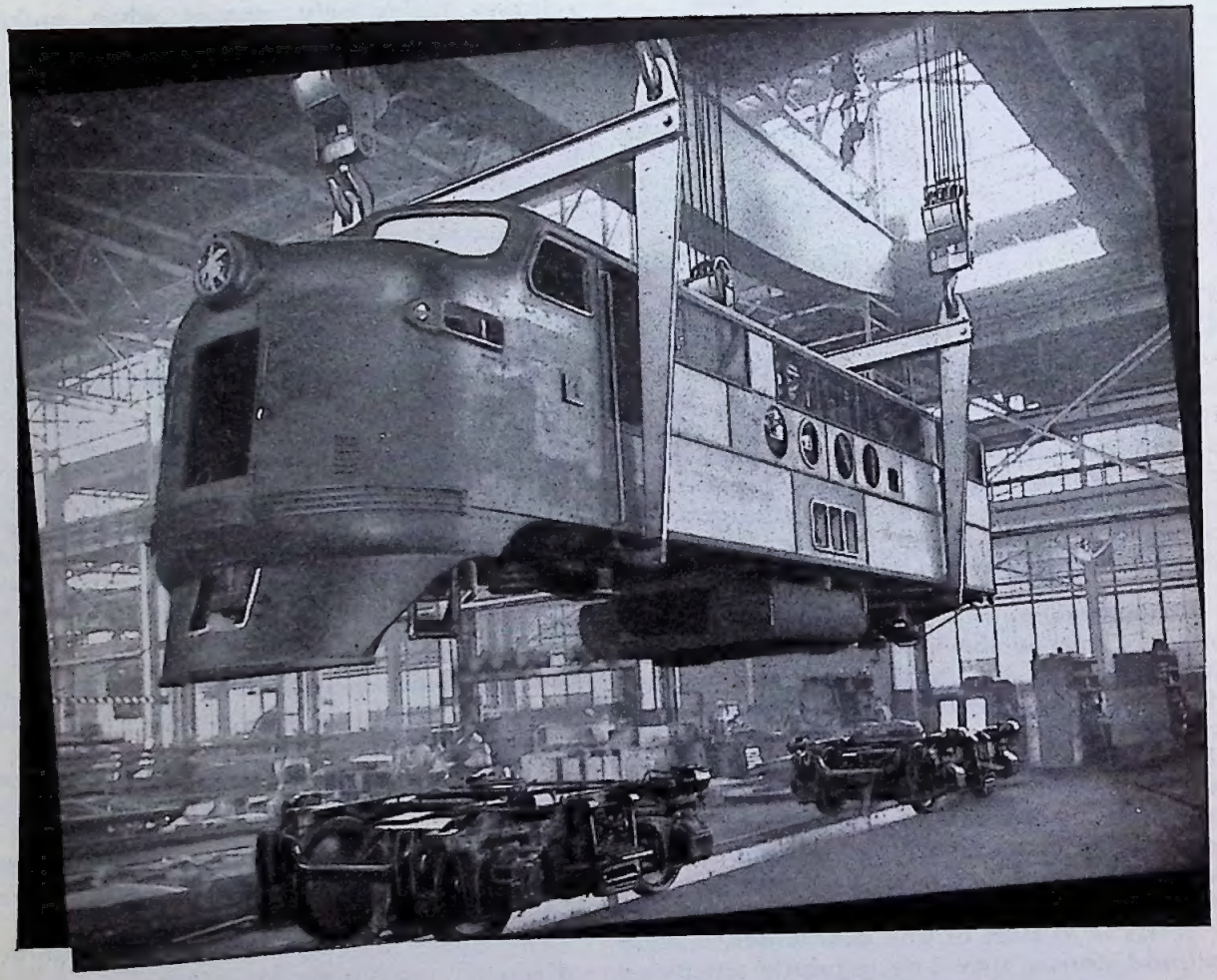
1st $100

2nd $50

3rd $25

Fourth and fifth prizes of $10 and $5 will also be awarded.

Trains Magazine
1027 N. 7th St.
Milwaukee 3, Wis.



Now Building... FOR A GREATER C&EI

The C&EI is going places! Its objective is to provide unexcelled transportation between all its terminals—passenger accommodations worthy of a streamlined age, and speed, service and efficient handling for growing freight tonnages. Conditions retard the delivery of much new equipment and congestion hampers existing facilities, but the C&EI betterment program is under way.

Two of the latest type streamlined passenger trains have been on order for some time . . . the picture above shows the joining of the body to the trucks on a 2,000 horsepower passenger Diesel such as will draw these new trains. Nearly one-third of a large fleet of new traffic equipment is already serving the great C&EI territory in Illinois and Indiana. Efficient new switching locomotives are already at work on the C&EI.

C&EI plans include not only the modernization of much existing rolling stock, but permanent improvements to right-of-way, shops, yards, stations and terminal facilities. Watch the service-minded C&EI—it's going places.

SPEED C&EI SERVICE The CHICAGO Line

CHICAGO & EASTERN ILLINOIS RAILROAD

The Chicago Line

Correspondence

I have had a chance to study to some extent the railroads in scattered parts of England and France. I think the French railroads are superior to the English even though the French railroads took a hell of a lot harder beating. We of the Air Force ground crew didn't get to see much of the actual fighting and destruction but we have seen the results: broken ties, twisted rails, and mangled cars and locomotives going to the big shops (now open air due to the bombing) near Amiens. Just over the hill from us is a four-track main line which runs to Paris, Lille, Brussels, La Harve, Dunkirk and Calais.

Pfc. John A. Gall, U.S.A.A.F., c/o Postmaster, New York, N. Y.

The little trip over the old East Jordan & Southern [July 1945 TRAINS] should be taken by all dyed-in-the-wool fans. EJ&S car No. 2 is a museum piece and should be preserved by some historical society as a relic of railroading of the 1880's. It is heated by a stove, has kerosene lamps, low backed, plush covered seats and has the high clerestory with the colored glass in the ventilator. A brass plate covering the king bolt bears the inscription "Grand Trunk, 1889." None of the officials of the road seem to know any more of its history. The town of East Jordan is an old lumber center and was formerly the home of one of Michigan's great lumber barons, David Ward. Ward had vast holdings in the hinterland east of East Jordan, and he built a railroad from Frederic, on the Mackinaw Division of the Michigan Central, to East Jordan which crossed the GR&I at Alba. He called the road the Detroit & Charlevoix, and it entered East Jordan via the Jordan River Valley. The track paralleled that of the EJ&S for several miles. The Detroit & Charlevoix was later acquired by the Michigan Central, and was completely abandoned a few years ago.

Harold Blair, 1220 Academy St., Kalamazoo 49, Mich.

The picture caption on page 17 of July 1945 TRAINS spells it "Deisel." The story on Burlington's Wind River Canyon spells it "Deisel." The caption under the pictures on page 28 spells it "Deisel." Sich proof reading! In Larry Sagle's article (second paragraph on page 38) it is spelled both "Deisel" and "Diesel." Tch, Tch!

Bill Rau Jr., Ward E., Pittsburgh T.B. Sanitorium, Pittsburgh, Pa.
[See this month's Running Extra column—Ed.]

Page 18, June 1945 TRAINS: Don't you have proofreaders? Sedalia is in Missouri; Salida is in Colorado.

Anonymous, Biltmore Hotel, Los Angeles, Calif.
[Yes, we have proofreaders, although not enough, but this was one time Mr. Anonymous was right about not signing his name. There is a Sedalia in Colorado as well as in Missouri, and the reference to it was correct.—Ed.]

Page 18, July 1945 TRAINS: Thanks for annexing the Texas Panhandle to Oklahoma south of Clovis as shown on the map. Texas has been taking credit from Oklahoma for years so this helps to even the score.

Preston George, 612 N. Hightower, Altus, Okla.

A lot of good yarns are waiting to be told about the roads in the West and Southwest which no longer exist. One such is the El Paso & Southwestern system which began in 1887 with two locomotives and 40 miles of rough track, and grew, by contrast with the poor old Colorado-Midland, into a 1000-mile system with mighty motive power and no financial worries. When the EP&SW disappeared from the railroad maps in 1924 it had paid cash on the barrel head for every mile of construction, never had a bonded debt and eight people owned all the stock.

Hal Hayhurst, P.O Box 421, Vallejo, Calif.

Running Extra

Our proofreading department stood in line for a grim beating last month when it unabashedly allowed several pages of TRAINS to run off the presses with Diesel spelled "Deisel." Called to task for this flagrant act, a spokesman for the culprits simply planted both feet on the carpet and said, "We all love *steam* locomotives." This display of loyalty so completely nonplussed the boss that nothing more was said—until our readers saw the slip. Since then we have been accused of everything from inefficiency to attempting to confuse the Diesel vs. steam controversy by diverting the issue.

The proof reading department is answering the letters.

Recent events proved that one thing which should have run in Trains last month was a prophetic item deleted because of space restrictions. A. C. Kalmbach wrote: "As many as two thirds of all Pullmans may be in troop service within a few months. Civilians may expect sleepers to be pulled off regular runs with little or no notice." This item's absence became important only when a few days after press time the O.D.T. announced the abandonment of sleeper service on 450-mile runs.

One of the difficulties our mailing room has encountered has been keeping up with the demand for the more popular books on railroads. Such was the case with Robert Selph Henry's, "This Fascinating Railroad Business," which sold out so fast that for some time we have been unable to accept orders on this book. A new and ample supply arrived from the publisher the other day, however, and you can now obtain copies of this book at $3.50 each. In its second revised edition, "This Fascinating Railroad Business" provides a complete and clear-cut picture of the railroading industry, the service provided by this industry, and how that service is produced.

With justifiable pride we'd also like to call attention to the reception given our nine Trains Albums of Railroad Photos. These books, by railfans and for railfans, contain a collection of photos which we selected from the collection of rail photographers as the best we've seen. Printed on only one side of special high gloss paper, the large 10¼" x 14" pages can be removed for framing without damaging the ring binding. There are many huge, full page photos, and all pages carry informative, accurate and interesting captions. Each of the books has a distinctive cover and may be ordered at $1 each.

Book 1—Eastern Railroads; Book 2—Far Western Railroads; Book 3—Midwestern Railroads; Book 4—Colorado Railroads; Book 5—Southern Railroads; Book 6—New England Railroads; Book 7—Electric Railways; Book 8—Pennsylvania Railroad; Book 9—New York Central Railroad.

Kalmbach Publishing Co.
1027 N. 7th St. Milwaukee 3, Wis.

Groundwork

Millions will be needed for "Deferred Maintenance"

AY'S mighty war loads are riding on foundations e that pictured . . . "highways" into which the rail-ds have put more than 4 billion dollars for improve-nts since the last war.

wear and tear on roadway, bridges, locomotives, and equipment have been terrific. And material labor for needed maintenance are not obtainable beyond the minimum necessary for safe, con-d operation. As a result, much work that should one has had to be deferred.

ey from current revenue should be saved to pay e needed repairs and replacements when material abor are available. But the tax law forbids. If

But it isn't profit. It is the life-blood of the railroads.

To tax this money away, simply because it cannot be spent now due to war conditions, threatens the back-bone of American transportation.

Congressional amendment of the tax law to permit this money to be put aside for replacements would mean strong postwar railroads and thousands of jobs for returning fighting men.

PENNSYLVANIA RAILROAD

Serving the Nation

★ *53,490 entered the Armed Forces* ★ *906 have given their lives for their Country*